



FLORIDA EXPRESS LANES

FLORIDA DEPARTMENT OF TRANSPORTATION

# EXPRESS LANES MANUAL <sup>∞</sup>2018



DRAFT

FloridaExpressLanes.com | June 21, 2018



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## ACRONYMS AND ABBREVIATIONS

ATS	Automatic Transfer Switch
AVI	Automatic Vehicle Identification
CCSS	Centralized Customer Service System
CEI	Construction Engineering Inspection
ConOps	Concept of Operations
DMS	Dynamic Message Sign
DTOE	District Traffic Operations Engineer
ELM	Express Lanes Module
ELOP	Express Lanes Operating Procedure
ELToD	Express Lanes Time of Day
EL-to-EL	Express Lanes to Express Lanes
ERA	Emergency Refuge Area
ERC	Electronic Review Comments
FAQ	Frequently Asked Question
FDM	FDOT Design Manual
FDOT	Florida Department of Transportation
FELM	FDOT Express Lanes Manual
FHP	Florida Highway Patrol
FHWA	Federal Highway Administration
FPID	Financial Project Identification
FSUTMS	Florida's Standard Urban Transportation Model Structure
GTR	General Tolling Requirements
ICD	Interface Control Document
ILEV	Inherently Low Emission Vehicle
IRR	Internal Rate of Return
ITS	Intelligent Transportation Systems
LOS	Level of Service
LRE	Long Range Estimate
MOT	Maintenance of Traffic
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MUTCD	Manual on Uniform Traffic Control Devices
NPV	Net Present Value
O&M	Operations and Maintenance
O-D	Origin-Destination
OTM	Operations Task Manager
P3	Public-Private Partnership
P75	Probability 75

## ACRONYMS AND ABBREVIATIONS

PD&E	Project Development and Environment
PFO	Project Finance Office
PIO	Public Information Officer
PM	Project Manager
PTZ	Pan/Tilt/Zoom
QA	Quality Assurance
QC	Quality Control
RCTO	Regional Concept of Transportation Operations
RF	Radio Frequency
RFP	Request for Proposal
ROW	Right of Way
SCADA	Supervisory Control and Data Acquisition
SELS	Statewide Express Lanes Software
SEMP	Systems Engineering Management Plan
SFCS	South Florida Commuter Services
SHS	State Highway System
SIB	State Infrastructure Bank
SIS	Strategic Intermodal System
STTF	State Transportation Trust Fund
T&R	Traffic and Revenue
TAS	Toll Amount Sign
TD	Traffic Density
TDH	Turnpike Design Handbook
TEM	Traffic Engineering Manual
TFC	Transportation Financing Corporation
TIM	Traffic Incident Management
TMC	Traffic Management Center
ToD	Time of Day
TSM&O	Transportation Systems Management and Operations
TSTM	Toll Siting Technical Memorandum
TTCP	Temporary Traffic Control Plan
VDS	Vehicle Detection Systems
VTTS	Value of Travel Time Savings

## GLOSSARY OF TERMS

### GENERAL

The definitions used in the ***FDOT Express Lanes Manual (FELM)*** are assigned for consistency of understanding, and interpretation of the policies and processes contained herein. If the definition of a term conflicts with another FDOT manual(s), use the definition provided in this ***Chapter*** for that term.

### FDOT EXPRESS LANES MANUAL DEFINITIONS

- (1) **All-Electronic Tolling:** A set of technologies that allow for the payment of tolls electronically, using special equipment located on overhead gantries.
- (2) **Barrier Separation:** Continuous concrete walls that are used to separate the express lanes from the general use or general toll lanes.
- (3) **Design Exception:** Required when proposed design elements are below both the Department's governing criteria and AASHTO's new construction criteria for the Controlling Design Elements, as identified in the ***FDOT Design Manual***.
- (4) **Design Variation:** Required when proposed design elements are below the Department's criteria, and where a Design Exception is not required.
- (5) **Deviation:** Required for a departure from the application of Express Lanes Policy as defined in ***FELM 1***.
- (6) **Direct Connects:** Dedicated ramps between express lanes from one facility to another facility to provide a seamless network of express lanes.
- (7) **District and Turnpike Express Lanes Responsibility Matrix (Responsibility Matrix):** A table that identifies the roles and responsibilities for many elements of the express lanes facility, from planning through operations and maintenance.
- (8) **Dynamic Message Sign (DMS):** A large electronic sign over or near roadways used to display real-time traffic information to travelers.
- (9) **Dynamic Pricing:** A toll amount that is adjusted based on traffic conditions in the express lanes.
- (10) **Eligible Trips:** Trips that have the ability to enter and exit the express lanes based on their origin and destination.

## GLOSSARY OF TERMS

- (11) **Exception:** A case to which a rule does not apply. For express lanes, exceptions are identified in **FELM 1**.
- (12) **Exemption:** Immunity from the requirements to which others must abide. For express lanes, exemptions are defined in **Sections 14-100.004(4) and 14-100.006(3), Florida Administrative Code** which identify vehicles that are not required to pay tolls.
- (13) **Express Lanes Diagrams:** A series of diagrams that present number of lanes, access points, toll point locations, and conceptual signing for an express lanes project. Express lanes diagrams may be prepared for multiple phases of a project.
- (14) **Express Lane Markers:** A series of tubular pylons or delineators that separate the express lanes from the general use or general toll lanes.
- (15) **Express Lanes Toll Segment:** The distance between an ingress (entry) to the express lanes and the next point of egress (exit).
- (16) **Express Lanes:** A type of managed and tolled travel lane physically separated from a general use or general toll lane within a roadway corridor.
- (17) **Free-Flow Traffic:** When vehicles are able to safely operate at speeds of 45 mph or higher.
- (18) **Gantry:** An overhead structure or assembly that provides support for signs and other traffic equipment. The Department uses two types of gantries for express lanes projects:
  - a. **Data Gantry:** One that does not charge a toll, but rather collects the information needed to accurately identify the customer's entry into the express lanes. Data gantries are required to be placed between successive ingresses.
  - b. **Toll Gantry:** One that does charge a toll and contains the apparatus for traffic monitoring systems and cameras, or open road tolling systems.
- (19) **General Toll Lanes:** Toll lanes with a static toll amount that are adjacent to express lanes.
- (20) **General Tolling Requirements (GTR):** The Department's source of tolling requirements for the development of all tolling projects.
- (21) **General Use Lanes:** Un-tolled travel lanes adjacent to express lanes.

## GLOSSARY OF TERMS

- (22) **Hireback Contract:** An agreement between FDOT and Florida Highway Patrol (FHP) to perform enforcement services on Department-owned facilities.
- (23) **Intelligent Transportation Systems (ITS):** Electronics, photonics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system. (From Section 501 of Title 23, United States Code, as amended).
- (24) **Lane Status Dynamic Message Sign (LSDMS):** Notifies users if the express lanes facility is open or closed, as well as other relevant warnings prior to entering the express lanes.
- (25) **Level of Service (LOS):** A quantitative stratification of the quality of traffic service into six letter grade levels, with "A" describing the highest quality and "F" describing the lowest quality.
- (26) **Managed Lanes:** Highway facilities or a set of lanes where operational strategies are proactively implemented and managed in response to changing traffic conditions.
- (27) **SunGuide:** Florida's statewide advanced traffic management systems (ATMS) software that monitors traffic, manages incidents, disseminates traveler information, exchanges critical information among agencies, and collects and reports data regarding the operation of Florida's transportation system.
- (28) **SunPass®:** The Florida Department of Transportation's Prepaid Toll Program.
- (29) **Systems Engineering Management Plan (SEMP):** A plan used by the Project Manager or ITS Engineer to manage a project with systems engineering principles and methods. For more information, refer to *Florida's Statewide Systems Engineering Management Plan, March 2005*.
- (30) **Time of Day Pricing:** A method of establishing an automated toll amount schedule from historical data that specifies the toll in effect for each fifteen-minute interval for each type of day.
- (31) **Toll Amount:** The charge for using the express lanes. The toll amount can be a minimum charge or higher, as determined by the dynamic pricing software, per *FELM Policies 1.2.4* and *1.2.5, Florida Administrative Code*, and *Florida Statutes*.
- (32) **Toll Amount Sign (TAS):** Displays the toll amount that will be charged to the customer for traveling to one or more destinations in the express lanes.



## GLOSSARY OF TERMS

- (33) **Value of Travel Time Savings (VTTS):** Refers to the perceived value of travel time saved from traveling a tolled facility instead of taking an alternate, non-tolled route for the same trip. The amount that a traveler would be willing to pay in order to save time and have a more reliable travel time.
- (34) **Violation:** Occurs when a driver uses the express lanes without traveling in an eligible vehicle or without having a properly mounted, activated SunPass® or other interoperable transponder.

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Approved:

Effective: June 21, 2018  
Office: Traffic Engineering  
and Operations  
Topic No.: 750-000-003

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Department of Transportation

## Introduction

# FDOT EXPRESS LANES MANUAL

## PURPOSE

The purpose of the ***FDOT Express Lanes Manual (FELM)*** is to provide policies, standards, guidelines, and considerations to be used for the development of express lanes for the Florida Department of Transportation (FDOT or Department) on the State Highway System (SHS). The ***FELM*** addresses the following technical disciplines: planning, design, traffic engineering and operations, finance, traffic and revenue, tolling, operations, maintenance, and public outreach to ensure consistent development and operation of the FDOT's Districts and Florida's Turnpike Enterprise (Turnpike) express lanes throughout the state. To the greatest extent possible, the standards and criteria for design and Intelligent Transportation System (ITS) devices for express lanes are included in the ***FDOT Design Manual (FDM) 2018***. The signing and pavement marking requirements for express lanes are included in the ***Traffic Engineering Manual (TEM) 2018***. For these two topics, the ***FELM*** contains supplemental guidelines, considerations and references.

## AUTHORITY

***Sections 20.23(4)(a) and 334.048(3), Florida Statutes***

## SCOPE

The ***FELM*** is intended for use by District and Turnpike staff, and consultants under contract responsible for developing and operating express lanes on limited access highways on the SHS.

## REFERENCES

***Sections 316.0741 (4)(5)(6), 335.02(3), 338.151, 338.155, 338.166, and 338.221, Florida Statutes. Sections 14-100-003, 14-100-004, 14-100-005, and 14-100.006, Florida Administrative Code.***

## DISTRIBUTION

The document is available electronically on the Department's Express Lanes web page: <http://www.floridaexpresslanes.com>

**FELM** users can register to receive notification of updates and **Traffic Engineering and Operations Bulletins** online through the Department's Contact Management Database at:

<https://fdotewp1.dot.state.fl.us/ContactManagement>

## REVISIONS AND UPDATES

**FELM** users are encouraged to submit comments and suggestions for changes to the **FELM** to the State Traffic Engineering and Operations Office and/or the Express Lanes Planning Department. When ideas or suggestions are received, they will be reviewed by the appropriate office affected by the proposed change. Items warranting immediate change will be made with approval of the State Traffic Operations Engineer in the form of a **Traffic Engineering and Operations Bulletin**.

Traffic Engineering and Operations Bulletins are numbered based on the two-digit calendar year and bulletin number (YY-##). Notices are sent to all users who are registered to receive notifications for **Traffic Engineering and Operations Bulletins** and updates to the **FELM**. **Traffic Engineering and Operations Bulletins** affecting the **FELM** will remain effective until either:

- (1) An official **FELM** revision is published; or
- (2) The **Traffic Engineering and Operations Bulletin** is rescinded.

**Traffic Engineering and Operations Bulletins** are posted at:

<http://www.fdot.gov/traffic/TrafficOps-Bulletins.shtml>

Proposed revisions are distributed in draft form to each State, District, and Turnpike Traffic Operations Engineer, Roadway Design Engineer, the Toll Systems Director, State Managed Lanes Engineer, Project Finance Manager, and the Turnpike's Express Lanes Development Administrator.

## PROCEDURE

It is the intent of the Department to plan, design, and operate the State Highway System (SHS) as efficiently as possible. Therefore, various transportation systems management and operations (TSM&O) strategies, including express lanes, are evaluated.

The procedures outlined in the **FELM** are used when express lanes have been identified as a feasible alternative for adding capacity to an existing limited-access facility on the State Highway System.

# Chapter 1

## EXPRESS LANES POLICY

### 1.1 GENERAL

The Florida Department of Transportation (Department or FDOT) implements express lanes for congestion management purposes to promote free-flow traffic. This **Chapter** summarizes the Department's policies regarding various aspects of project development for express lanes on the State Highway System (SHS). The Department has established policies per **Sections 120.536, 334.044, and 338.151, Florida Statutes**; with additional authority granted in **Section 338.2215, Florida Statutes**, specific to Florida's Turnpike Enterprise. Furthermore, the Department uses Directives (Topic Numbers) to establish new policies and to update existing ones. Certain Department policies may vary depending upon whether the express lanes are on the Interstate (or other Non-Turnpike<sup>1</sup> facilities) or on the Turnpike System.

This **Chapter** organizes Department policy contained herein by topic including statutory authority and exception(s), as applicable. All **Florida Administrative Code** and **Florida Statutes** referenced in this **Chapter** are included in their entirety in **Appendices 1 (A)** and **1 (B)**. In the event of a conflict or inconsistency, specific administrative code and / or statutes relevant to express lanes take precedence over the summary information contained in this **Chapter**.

### 1.2 TOLLING

This **Section** identifies policies related to the various aspects of tolling for express lanes. These policies are used statewide, and apply to the Interstate, as well as the Turnpike System, unless otherwise stated.

#### 1.2.1 Additional Capacity Policy

Additional capacity on an Interstate or Turnpike facility can be achieved by adding general use or general toll lanes, or express lanes. If express lanes are being considered to add capacity, the high-level decision tree and checklist shown in **Appendix 2 (A)** are required to evaluate the use of express lanes. More information about the decision tree and checklist is provided in **FELM 2.3**.

**Authority:** *FDOT Express Lanes Manual, June 21, 2018*

**Exception:** None.

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<sup>1</sup> Department express lanes implemented on non-interstate, SHS facilities such as SR 826/Palmetto Expressway are required to comply with the **FDOT Express Lanes Manual (FELM)**.



### 1.2.2 Toll Segment Policy

Tolls in the express lanes are charged on a per segment basis as defined in **FELM 5.4**. Each toll segment is at least one (1) mile long. Each toll segment has only one (1) gantry that charges a toll. However, if a toll segment transitions from one express lane to two express lanes via an intermediate ingress point, a toll gantry is placed on both the one-lane and two-lane portions of the toll segment. For more information, refer to **FELM 5.4**.

**Authority:** *FDOT Express Lanes Manual, June 21, 2018*

**Exception:** None.

### 1.2.3 Access to General Use or General Toll Lanes Policy

A toll segment series may contain up to three (3) consecutive toll segments. The egress to the destination for each toll segment is displayed on a Toll Amount Sign (TAS) in accordance with the requirements in the **FDOT Traffic Engineering Manual**. The final destination of each toll segment series is required to provide express lanes customers with the option to egress back to the general use or general toll lanes.

**Authority:** *FDOT Express Lanes Manual, June 21, 2018*  
*FDOT Traffic Engineering Manual, 2018*

**Exception:** None.

### 1.2.4 Non-Turnpike Dynamic Tolling Policy

All express lanes on non-Turnpike facilities are dynamically tolled based on demand in the express lanes with the toll amount beginning at \$0.50 per express lanes segment.

**Authority:** *Sections 338.155 (1), 338.166(5), and 338.2216(1), Florida Statutes, and Section 14-100.003, Florida Administrative Code*

**Exceptions:** The maximum toll amount established for 95 Express Phase 1 between Mile Marker 4 and Mile Marker 12 is set at \$1.50 per mile, per **Section 14-100.003, Florida Administrative Code**. The minimum toll amount is charged if the average travel speed in an express lanes segment falls below 40 miles per hour, per **Section 338.166 (5), Florida Statutes**.

### 1.2.5 Turnpike Dynamic Tolling Policy

All express lanes on Turnpike facilities are tolled as follows:

- (1) When the express lanes segment is operating at a Level of Service (LOS) A, the toll amount is the same as the SunPass® general toll lane amount in the adjacent lanes.
- (2) When the express lanes segment is operating at a LOS B, the toll amount is \$0.25 more than the SunPass® general toll lane amount in the adjacent lanes.
- (3) When the express lanes segment is operating at a level of service other than LOS A or LOS B, the toll amount is dynamically set by traffic in the express lanes.

**Authority:** *Sections 338.155 (1), 338.166(5), and 338.2216(1), Florida Statutes, and Section 14-100.003, Florida Administrative Code*

**Exception:** If the average travel speed in an express lanes segment falls below 40 miles per hour, the toll amount charged for that express lanes segment is the SunPass® toll amount for the adjacent general toll lane plus \$0.25 per *Section 338.2216 (1)(e), Florida Statutes.*

### 1.2.6 Non-Turnpike Toll Exemptions Policy

Properly registered public transit buses, school buses, over-the-road buses, and vanpools are exempt from paying a toll on all Non-Turnpike express lanes. Per **Section 338.155, Florida Statutes**, other exemptions are allowed for law enforcement and emergency vehicles on official business.

In addition, properly registered carpools with three (3) or more occupants, hybrids, and inherently low emission vehicles (ILEVs) are exempt from paying a toll on 95 Express in Miami-Dade, Broward, and Palm Beach Counties. Motorcycles are exempt from paying a toll on 95 Express in Miami-Dade, Broward, and Palm Beach Counties.

### 1.2.7 Turnpike Toll Exemptions Policy

Properly registered public transit buses, school buses, over-the-road buses, and vanpools using the express lanes on the Turnpike System are required to pay the SunPass® general toll lane amount in the adjacent lanes. Per **Section 338.155, Florida Statutes**, other exemptions are allowed for law enforcement and emergency vehicles on official business.

Exemptions for Turnpike and Non-Turnpike express lanes are summarized in **Table 1.1**.

**Table 1.1: Express Lanes Toll Exemptions**

Vehicle Types	Registration Required <sup>(1)</sup>	Toll Exemptions by Facility		
		Turnpike	Non-Turnpike	95 Express (in Miami-Dade, Broward, and Palm Beach Counties)
Public Transit Buses	Yes	X	X	X
School Buses	Yes	X	X	X
Over the Road Buses	Yes	X	X	X
Vanpools	Yes	X	X	X
Hybrids & ILEVs	Yes			X
3+ Carpools	Yes			X
Motorcycles	No			X
Notes: (1) Law enforcement/emergency vehicles on official business and motorcycles are not required to register. All other vehicle types listed above must register through South Florida Commuter Services (SFCS) or SunPass®.		Pay only SunPass® general toll amount	Exempt from paying the express lanes toll	

**Authority:** *FDOT/FHWA Urban Partnership Agreement, Sections 14-100.004 and 14-100.006, Florida Administrative Code, Section 316.0741, Florida Statutes, Turnpike System Bond Covenants, and Section 338.155, Florida Statutes*

**Exception:** None.

## 1.3 VEHICLE ELIGIBILITY AND VIOLATIONS

This **Section** covers vehicle eligibility and violations for express lanes.

### 1.3.1 Vehicle Eligibility Policy

Only two-axle vehicles, buses, and motorcycles equipped with a properly mounted SunPass® (or other interoperable transponder) are eligible to travel in the express lanes.

**Authority:** *FDOT, Express Lanes Manual, June 21, 2018 and Section 14-100.003, Florida Administrative Code*

**Exception:** None.

### 1.3.2 Violations Policy

For ineligible vehicles that use express lanes, a violation notice is issued to the registered owner of the ineligible vehicle traveling in the express lanes. A violation notice is issued on a monthly basis, and includes \$25 for each day an express lanes violation is incurred, plus all tolls associated with the violation(s), and an administrative charge of \$2.50 per violation notice. (The administrative amount is designed to recover the toll operating costs associated with reviewing plate images, identifying the owner of the vehicle, sending the notice, processing payments, and handling customer calls.)

**Authority:** *Sections 14-100.001, 14-100.002, 14-100.003, and 14-100.005, Florida Administrative Code*

**Exception:** None.

## 1.4 STATEWIDE SOFTWARE AND EXPRESS LANES OPERATIONS

The Statewide Express Lanes Software (SELS) uses input data regarding traffic conditions in order to determine toll amounts that facilitate express lanes operations for achieving free-flow conditions. Refer to **FELM 6.4** for additional information about SELS, and to **FELM 10.2** for additional information about free-flow conditions.

### 1.4.1 Statewide Express Lanes Software Policy

SELS is the required tool used to determine toll amounts in the express lanes for all Interstate and Turnpike facilities.

**Authority:** *FDOT Express Lanes Manual, June 21, 2018*

**Exception:** None.

### 1.4.2 Free-Flow Conditions Policy

Traffic in the express lanes should be moving at free-flow speed. Free-flow conditions in the express lanes are established when vehicles are able to safely operate at speeds of 45 miles per hour or higher. Toll amounts in the express lanes are dynamically updated by SELS to support free-flow conditions.

**Authority:** *14-100.003, Florida Administrative Code*

**Exception:** During incidents and crashes in the express lanes or the general use or general toll lanes, the express lanes may operate per established incident management procedures.

## 1.5 COORDINATION

Coordination during express lanes project development is required. This includes coordination between the District(s) and the Turnpike, and Central Office for each stand-alone project, and additional coordination when express lanes projects connect to each other through contiguous project segments or through direct ramp connections. These connections are intended to provide a seamless network of express lanes.

At the project level, the required coordination is achieved through the completion of a District and Turnpike Express Lanes Responsibility Matrix (Responsibility Matrix), which identifies and defines key tolling and other elements of the project that need to be coordinated with the Turnpike.

Coordination for connections between projects include incident management on the dedicated ramps, sharing of traffic detector information, Traffic Management Center (TMC) coordination, and posting of toll amounts on dynamic message signs (DMS). These issues are explained in other chapters of this *Manual*.

### 1.5.1 District and Turnpike Express Lanes Responsibility Matrix and Project Coordination Policy

In order to coordinate the tolling portion of the project, a District and Turnpike Express Lanes Responsibility Matrix (Responsibility Matrix) is required to be completed by the District project owner, in coordination with the Turnpike, for each express lanes project. A template for the Responsibility Matrix is included in **Appendix 1 (C)**.

**Authority:** *FDOT Express Lanes Manual, June 21, 2018*

**Exception:** None.

### 1.5.2 Express Lanes Project to Express Lanes Project Connections Policy

The District project owner(s) is(are) required to coordinate with the Turnpike and Central Office on all express lanes projects. Additional coordination is required for systems that connect to other express lanes projects. Interim and ultimate express lanes diagrams are required to be prepared. Express lanes diagrams are further discussed in **FELM 2.6.2**. Project limits and limits of operational and maintenance responsibilities are required to be clearly delineated to facilitate coordination between projects.

**Authority:** *FDOT Express Lanes Manual, June 21, 2018*

**Exception:** None.



## 1.6 NON-TURNPIKE EXPRESS LANES FUNDING

When a Non-Turnpike project includes express lanes, additional funding is required for construction of the express lanes and associated structures to support the operation of the express lanes. The Project Finance Office (PFO) should be contacted early in the project development phase to assist in the evaluation of alternative financing options for the project.

### 1.6.1 Non-Turnpike Express Lanes Flow of Funds Policy

The flow of funds for Non-Turnpike express lanes is as follows: (1) payment for operations and maintenance (O&M) expenses of the regional network; (2) payment of any debt used to fund the express lanes; and (3) payment of renewal and replacement costs associated with the network. Any remaining revenue is used by the Department to construct, maintain, or improve roadways on the State Highway System (SHS) in the county or counties in which the revenue is collected or, with approval from the Secretary, to support express bus service in the express lanes.

**Authority:** *Section 338.166, Florida Statutes*

**Exception:** None.

## 1.7 POLICY DEVIATION REQUESTS

Individual characteristics of any given project may warrant flexibility in the application of the policies identified herein. Therefore, when necessary, a request to deviate from the policies identified in this **Chapter** may be made in accordance with the process identified in **FELM 11**.

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## Chapter 2

# PROJECT PLANNING

### 2.1 GENERAL

It is important to understand and to anticipate that express lanes projects generate unique issues and challenges that can affect project design, costs, implementation, operations, and schedule. Therefore, early and on-going coordination among the disciplines facilitates the proper communication of all project features and changes. Planning activities for express lanes include project identification, project coordination, and corridor development. These activities are coordinated with the Express Lanes Planning Department, as part of the Florida Department of Transportation's (Department's) statewide approach for express lanes.

This **Chapter** identifies and describes the important activities included in the Planning and Project Development and Environment (PD&E) phases of express lanes projects. Additional guidance on these phases can be found in the following resources, and other documents, as applicable:

- (1) ***FDOT Project Development and Environment (PD&E) Manual***
- (2) ***FDOT Project Traffic Forecasting Handbook***
- (3) ***FDOT Public Involvement Handbook***

### 2.2 EXPRESS LANES PLANNING DEPARTMENT

The Express Lanes Planning Department coordinates the early development of the Department's express lanes projects and tolling initiatives. It is part of Florida's Turnpike Enterprise (Turnpike), and is responsible for assisting the Department's Central Office, the Districts, and the Turnpike with the planning and coordination of all express lanes projects.

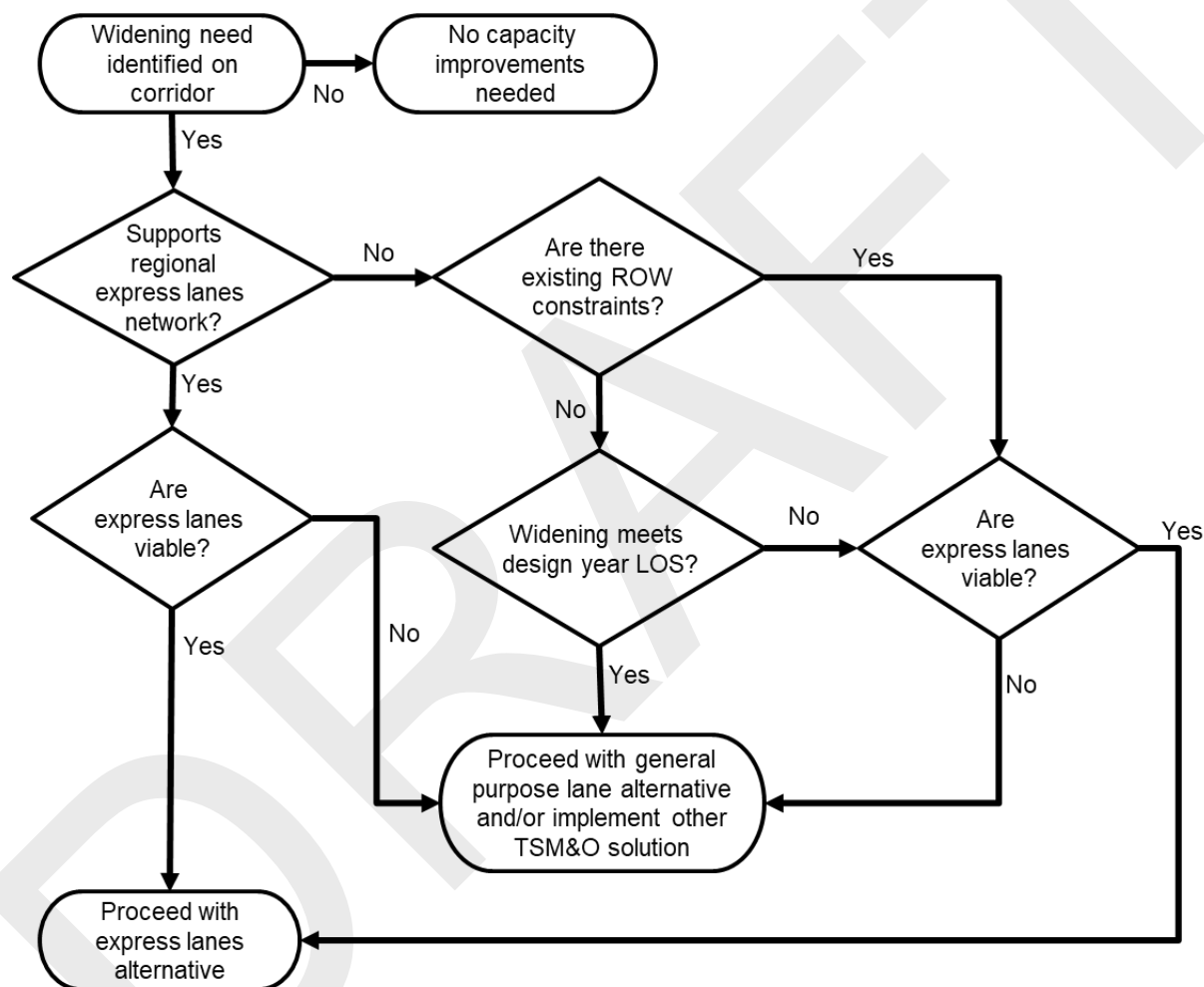
Major responsibilities for the Express Lanes Planning Department include Planning and Coordination which is further described in **FELM 2.4**; Traffic and Revenue Studies described in **FELM 3**; and Public Outreach described in **FELM 8**. The Express Lanes Planning Department coordinates many of its activities with the State Managed Lanes Engineer, the Project Finance Office (PFO), and with project managers and public information officers (PIOs) from the Districts and the Turnpike.

### 2.3 PROJECT IDENTIFICATION

A high-level decision tree has been developed to help determine the initial feasibility of express lanes as a capacity improvement option on all limited-access facilities on the State Highway System (SHS). The decision tree is supported by a checklist that identifies

the various project factors, i.e., planning, operational/geometric, financial, public support, and other project-specific issues and/or features that are considered when evaluating the use of express lanes for new capacity projects. The decision tree and checklist allow the Districts or the Turnpike flexibility in identifying the most appropriate capacity improvement solution. The decision tree is shown in **Figure 2.1** below and is included in **Appendix 2 (A)**.

**Figure 2.1: Express Lanes Screening Decision Tree**



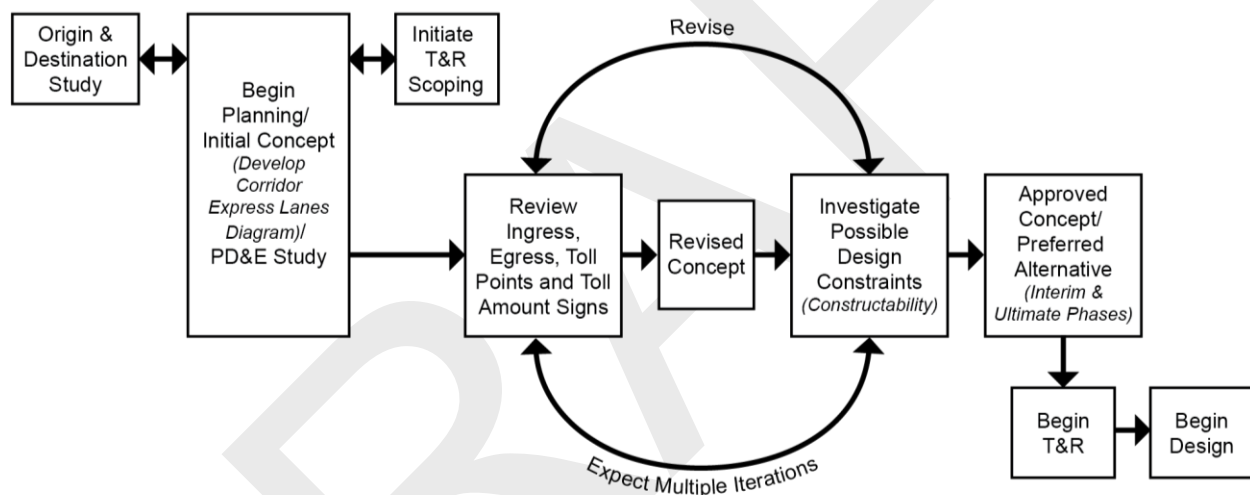
## 2.4 PROJECT DEVELOPMENT AND COORDINATION

The development of express lanes projects is different from that of traditional projects. Certain phases of project development are much more dynamic, requiring close coordination among the project disciplines including Planning, Project Development and Environment (PD&E), Design, Tolls, Traffic Operations, Project Finance, Construction, Public Outreach, and Maintenance. Early and on-going coordination among these disciplines begins as part of the Planning phase and is essential to project success. Per

**FELM 1.5.1**, a District and Turnpike Express Lanes Responsibility Matrix is required to be completed during the project's planning phase in order to formally facilitate early project coordination. A template for the Responsibility Matrix is included in **Appendix 1 (C)**.

The traditional project development process is generally a linear progression of a project through the phases to operation. As shown in **Figure 2.2**, project development for express lanes projects is an iterative process that determines the access plan and tolling points, through quantitative and qualitative analysis of the factors identified in **FELM 2.6.3.2**. This process leads to the development of the express lanes diagram for the corridor concept of operations (ConOps), as described in **FELM 2.5**.

**Figure 2.2: Express Lanes Project Development Process**



## 2.5 CONCEPT OF OPERATIONS

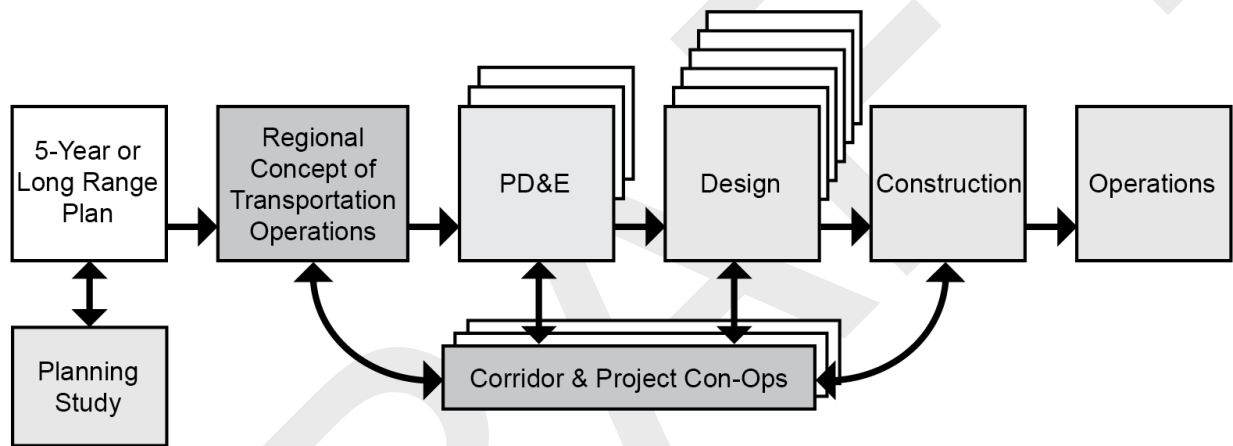
A concept of operations (ConOps) is a planning-level document that describes the express lanes facility and system, including operations, incident management, and maintenance. This planning-level document is based on the **Florida's Statewide Systems Engineering Management Plan (SEMP)**. The ConOps defines system elements and capabilities, user needs, and stakeholder roles and responsibilities. Stakeholders include operators, emergency responders, law enforcement, maintenance providers, local governments, transit agencies, customers, and others. The ConOps determines geographical and physical extent, sequence of activities performed, and the development, operation, and maintenance of a system.

The development of a ConOps document is intended to be part of an initial effort to collect requirements to develop roadway and system concepts, and to establish how systems operate and interact in the future. A ConOps is a "living document" that reflects a system's

evolving requirements, and should be reviewed and revised at key milestones during the system development.

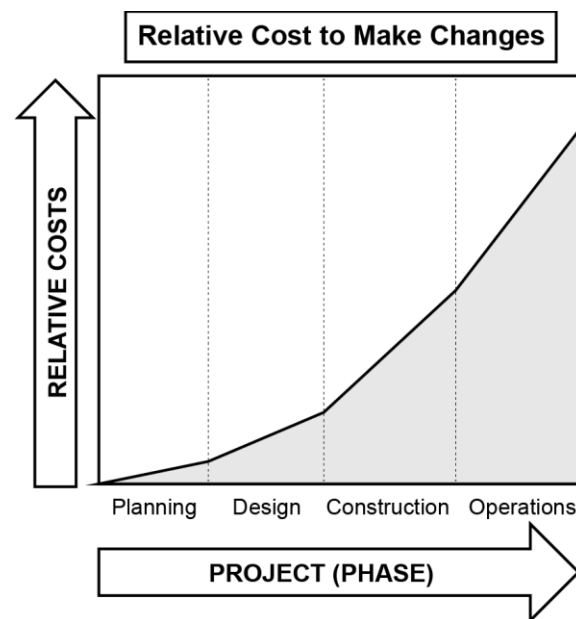
The express lanes system is defined by three (3) levels of ConOps: regional, corridor, and project specific. Each region in the State that is planning express lanes projects develops a regional concept of transportation operations (RCTO). The District(s) also develop(s) a corridor-level ConOps for each facility of the express lanes network. As specific projects within a corridor are funded for design, the District develops a project-level ConOps. The relationship between the phases of project development and the different levels of ConOps is shown in **Figure 2.3**.

**Figure 2.3: Relationship of Project Development Phases and Different Levels of ConOps**



The regional, corridor, and project operations influence many aspects of express lanes design. Any change to the express lanes or general use / general toll lanes, including access, toll gantry locations, and/or signing, can impact the operations of the project and those of an adjacent project or the overall corridor. Therefore, all changes to these elements are reviewed against all levels of ConOps documents, as necessary. This review is an iterative process as illustrated in **Figure 2.3** above. Changes identified early in project development have fewer iterations and less cost impacts than those changes made later in the process, as illustrated in **Figure 2.4** below.

**Figure 2.4: Relationship of Relative Cost to Project Development Phase**



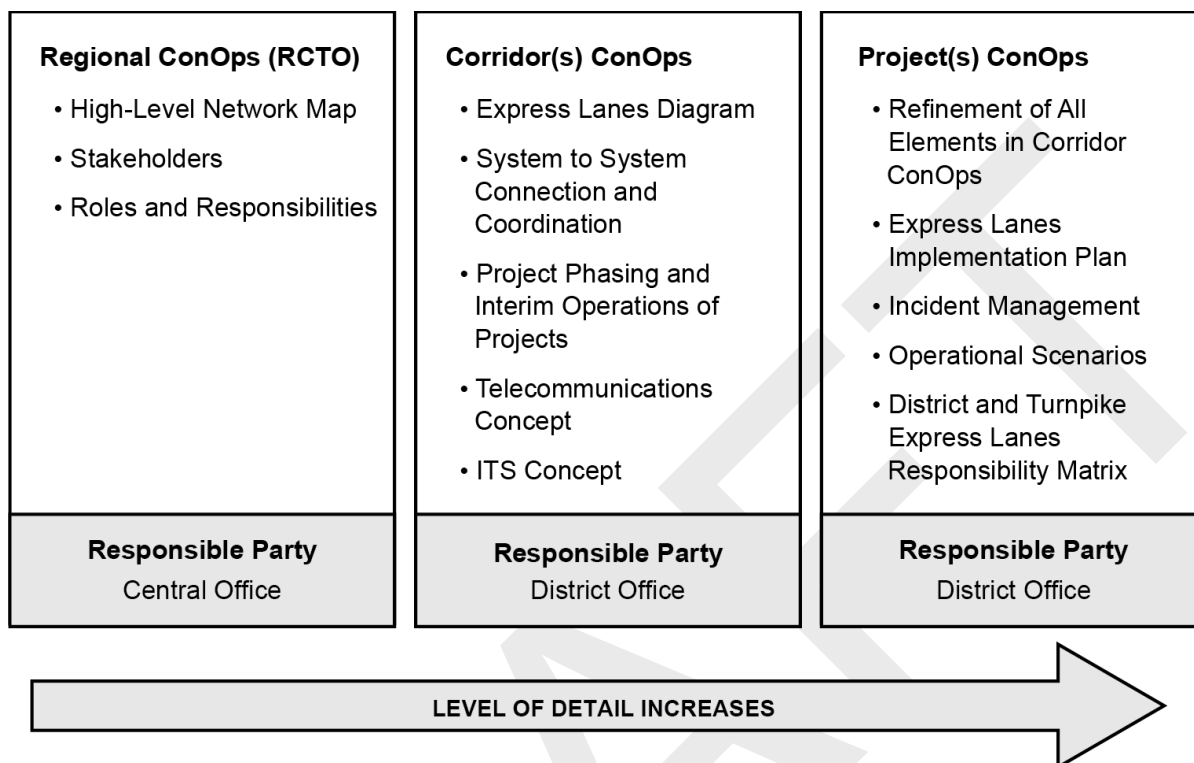
The development of RCTOs statewide is coordinated through the State Managed Lanes Engineer. Future updates to this Manual will contain more information on the RCTO development process. In accordance with **Title 23, Part 940, USC**, projects funded through the Highway Trust Fund are required to develop corridor- and project-level ConOps. Detailed descriptions of corridor- and project-level ConOps are included in the subsections below.

### 2.5.1 Corridor Concept of Operations

The Corridor ConOps is typically developed during the PD&E phase. The purpose of a Corridor ConOps is to coordinate design and operational elements when phasing multiple express lanes projects along one corridor. Some corridors will operate interim express lanes conditions as projects are open to traffic. In other cases, a corridor will not operate express lanes until all express lanes projects within that corridor are ready to be open to traffic. Therefore, it is important that the express lanes diagrams (defined in **FELM 2.6.2**) for the corridor ConOps are developed for interim and ultimate configurations.

### 2.5.2 Project Concept of Operations

The Project ConOps adds project-level details for express lanes operations within the context of the larger network. The Project ConOps is updated, as needed, during each phase of project development throughout the life of the project, as the system and operational roles and procedures are refined. Key elements for each level of ConOps are summarized in **Figure 2.5**.

**Figure 2.5: Major Elements for Different Types of ConOps**

## 2.6 CORRIDOR DEVELOPMENT

The project corridor concept is developed using express lanes diagrams for both the interim phase(s) and ultimate configuration, and must be considered within the context of the regional express lanes network. This helps to minimize the potential for changes in future phases of the project that could impact cost, schedule, and ability to operate.

The process for planning an express lanes corridor adds complexities compared to that of a general corridor widening. Typical corridor planning involves data collection, project forecasting, alternatives development, analysis, and recommendations. In some cases, public involvement is part of the corridor planning process.

Express lanes require collection of additional origin-destination (O-D) data, and development of the following: a corridor-level and multiple project-level ConOps, an access plan, an in-depth traffic safety and operational analysis, a more detailed forecasting process, and a preliminary breakdown of operational project limits. These analyses for express lanes corridor development may result in refinements to project limits as initially identified in the Work Program. The recommended components for express lanes corridor development are described in the subsections below.

### 2.6.1 Data Collection

Traffic characteristic data under existing conditions is obtained including traffic volume, vehicle classification counts, travel speeds, and O-D data. O-D data is a requirement for



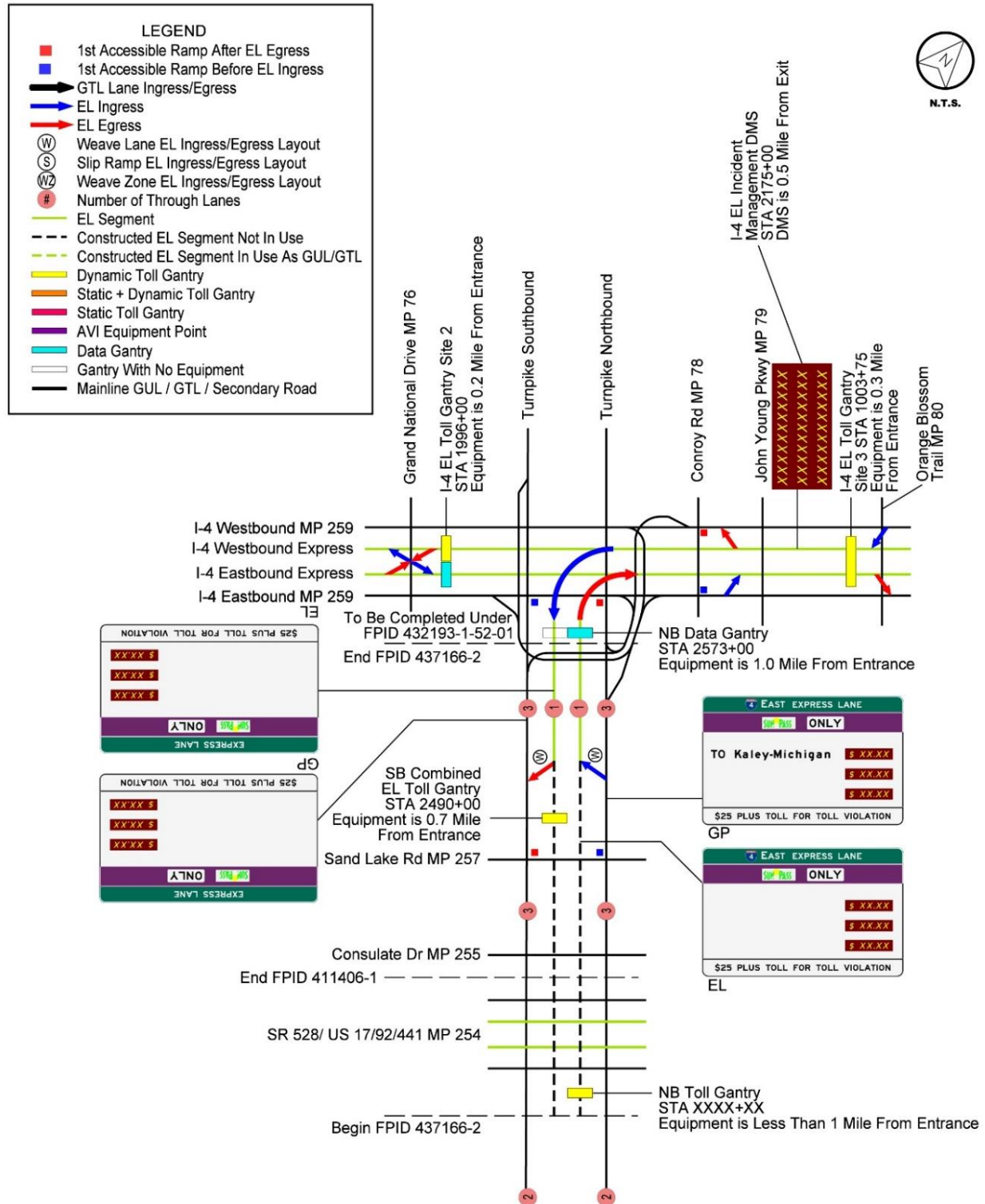
all express lanes projects. At a minimum, the O-D data defines the interchange to interchange movements within an existing corridor. As needed, O-D data is also collected for a subarea extending onto intersecting arterials or highways. The extent of the O-D study needs to be determined within the early project scoping efforts and with an understanding of planned or potential express lanes ingress/egress and/or direct connections to other highways and arterials.

Once obtained, the O-D data is processed and expanded to match the traffic counts at the peak period and daily level. Origin-destination expansion is conducted using matrix estimation in custom programming or vendor-supplied software applications.

## **2.6.2 Express Lanes Diagram**

Access locations and types are documented in the corridor ConOps, using an express lanes diagram. An express lanes diagram shows the number of lanes, access points, tolling points, destination signs, first available interchange exit/entrance, and Work Program Financial Project Identification (FPID) project limits. An example of an express lanes diagram is shown in **Figure 2.6**. Once the initial express lanes diagram is developed, an iterative process begins to analyze and revise the access plan based on operational and geometric analysis. The iterative process occurs in the Planning and PD&E phases of the project development cycle. **Appendix 2 (B)** provides examples of express lanes diagrams for projects with various phases.

Figure 2.6: Example of Express Lanes Diagram



### 2.6.3 Access Plan Development

Access is a key element in managing the traffic flow in express lanes. Therefore, access points are planned to best serve the travel characteristics of the corridor so that they will not produce adverse impacts to the express lanes and the parallel general use or general toll lanes. Allowing vehicles to enter (ingress) and exit (egress) at limited locations enhances the operations of express lanes by encouraging longer distance trips and reducing potential congestion due to vehicle interaction at the access locations. It is critical to select safe access points early in the planning phase. The location of access points is required to consider the provision of adequate weaving distances to or from adjacent corridor access to restrict unsafe maneuvers. The access types used on Florida's express lanes are described in **FELM 4.6**.

#### 2.6.3.1 Access Points

There are three (3) types of access points between general use or general toll lanes, and express lanes:

- (1) *Point of Ingress*  
This access point is located at the beginning of the express lanes corridor.
- (2) *Intermediate Point of Ingress or Egress*  
This access point occurs within the express lanes corridor where traffic enters the express lanes from the general use or general toll lanes or exits the express lanes to the general use or general toll lanes. Intermediate ingress and egress points may also include access to the surrounding roadway network directly (i.e., system to system or system to arterial direct connections).
- (3) *Termination of Express Lanes*  
This access point occurs at the end of the express lanes facility where all express lanes merge back into the general use or general toll lanes with a standard highway cross section.

#### 2.6.3.2 Factors for Determining Access Locations

Factors that are considered when choosing the most appropriate access locations and access types include the following:

- (1) Analysis of Origin-Destination (O-D) Data;
- (2) Spacing and Geometry of Interchanges;
- (3) Length of Segment(s);
- (4) Geometric Characteristics of the Corridor;
- (5) Operational Characteristics of the Corridor;
- (6) ITS/Signage;
- (7) Tolling Infrastructure;
- (8) Park-and-Ride Lot Locations;
- (9) Transit Service in the Corridor;
- (10) Availability of Right-of-Way;
- (11) Impacts to the Environment; and
- (12) Cost

### 2.6.3.3 Access Plan Key Characteristics

When developing an access plan, it is important to consider the number of interchanges along the express lanes corridor, as well as the length of the corridor segments and the percentage of trips estimated to be eligible to use the express lanes. Eligible trips are defined as trips that have the ability to enter and exit the express lanes based on their origin and destination. Ideally, an access plan, at a minimum, has the following key characteristics:

- (1) *Number of Lanes*  
Consists of at least two (2) express lanes per direction, where feasible;
- (2) *Segment Lengths*
  - (a) Serves a segment length of three (3) to seven (7) miles for express lanes corridors with one (1) express lane in each direction; or a segment length of four (4) to ten (10) miles for corridors with two (2) express lanes in each direction;
  - (b) Bypasses at least two (2) interchanges;
- (3) *Lane Change Distance*  
Supports a minimum of one thousand (1,000) feet per lane change (as specified in **FDM 211.14.1**) for ingress and egress locations to/from the surrounding roadway network; and
- (4) *Eligible Trips*  
Estimates eligible trips to be greater than forty percent (40%) of total corridor trips for each segment.

### 2.6.4 Express Lanes Demand

The demand to use express lanes is affected by several factors including roadway network, socioeconomic data, traveler characteristics, value of travel time savings (VTTs), and value of reliability. These factors help to determine the existing and future demand for express lanes. To estimate the demand for an express lanes project, the overall corridor demand must be determined. Corridor demand considers the facility being evaluated for express lanes, as well as the surrounding roadway network. It is also important to include capacity improvements to the adjacent general use or general toll lanes, and to other parallel (competing) corridors that can have an impact on the demand for an express lanes facility. Thus, it is very important to analyze express lanes demand from a system-wide perspective.

All express lanes projects include a forecast process to determine both the corridor demand, and the split between general use or general toll lanes and express lanes traffic. Project traffic forecasts are initially prepared in the Planning or PD&E phases of the project development process. As part of these phases, every effort is made to accommodate any and all project alternatives so that they can be given full consideration in the development of project traffic. This will help to minimize the need to update forecasts during the Design phase, and thus, help to reduce the amount of potential

rework. Corridor forecasts are prepared in accordance with procedures outlined in the ***FDOT Project Traffic Forecasting Handbook***.

Forecasts are also prepared for traffic and revenue studies, and these forecasts can be prepared in conjunction with the project traffic forecasts. The Express Lanes Time of Day (ELToD) model is the Department's preferred tool to estimate the proportion of demand in the general use or general toll lanes and express lanes when forecasting for express lanes projects. A more detailed explanation of ELToD is included in ***FELM 3***.

It is important to note that there is a difference between a forecast developed for PD&E and Design (i.e., project traffic) and a forecast developed for a traffic and revenue study (i.e., revenue traffic). These two types of forecasts are developed for different purposes. Project traffic is used to ensure adequate operational performance during the planning horizon of the project, while revenue traffic is used to determine the revenue potential for the tolled express lanes. A revenue traffic forecast also considers factors associated with uncertainty and is therefore, typically lower than a project traffic forecast.

### 2.6.5 Traffic Analysis

A traffic analysis is used in the development of an express lanes corridor to ensure that the proposed express lanes will operate properly and not produce adverse impacts to the operation of the adjacent general use or general toll lanes. The traffic analysis is performed in accordance with procedures outlined in the ***FDOT Traffic Analysis Handbook***, ***Highway Capacity Manual***, and ***Highway Safety Manual***.

The locations of intermediate access points (slip ramps and weave zones/lanes) need to be closely coordinated with the general use or general toll lanes entrance and exit ramps to allow adequate distance for motorists to complete weaving movements when traveling between the express lanes and the general use or general toll lanes. Access points must not be placed where recurrent general use or general toll lanes congestion is expected. This guidance avoids the potential for undesirable conditions that result in operational and safety deficiencies. The traffic analysis is performed through a traffic study that is conducted early in the project development process, either in the Planning or the PD&E phases. If there are changes in corridor geometrics during Design or Design-Build phases, then a re-evaluation is performed. At a minimum, the study is developed based on the following parameters:

- (1) ***Traffic Volume Forecast***  
Forecast volumes are estimated for the express lanes, adjacent general use or general toll lanes, corresponding interchange ramps and interchange ramp intersections.
- (2) ***Design Horizon***  
A 20-year Design horizon is used, based on the date of expected completion.
- (3) ***Vehicle Types***  
Different types of design vehicles, including trucks and buses, are considered in the analysis.

(4) *Operational Impact*

The operational impact of various elements of the facility are considered, including, but not limited to: a merge/diverge and weave analysis of all access points as defined in **FELM 2.6.3.1**; the operations of the mainline, interchange ramp merge/diverge areas, and ramp terminal intersections; and the intersection operations related to system to arterial direct connections. Various geometric constraints are considered, including locations where bottlenecks and queues are expected to form.

(5) *Safety Analysis*

A safety analysis to examine the effects of the express lanes on the performance of the facility. The safety analysis evaluates historical crash data to identify trends that could be corrected with the proposed improvements. The analysis may also include a quantitative evaluation of the future conditions to identify how the express lanes would affect safety performance.

## 2.7 EXPRESS LANES TO EXPRESS LANES DIRECT CONNECTIONS

As more express lanes projects are developed and implemented statewide, evaluation of possible connections between and among express lanes facilities is required. It can be beneficial to directly connect one express lanes facility to another express lanes facility. The direct connection provides a seamless network to improve regional mobility by more effectively serving high-volume, longer distance traffic movements. This section summarizes the process for evaluating express lanes to express lanes direct connections.

### 2.7.1 Considerations for Ramp Evaluation

The decision to add express lanes to express lanes (EL-to-EL) ramps connecting two (2) facilities requires an evaluation of traffic in the corridor to determine whether there is sufficient demand for these ramps. Ideally, regional travel demand models along with the Department's ELToD are used to determine hourly demand for the EL-to-EL ramps. In addition, the following are considered when evaluating the feasibility of these ramps:

(1) *Assessment of Directional Design Hourly Volume*

If the directional design hourly volume on EL-to-EL ramps exceeds 400 vehicles per hour for a single lane, then it is considered to be feasible. Directional design hourly volumes greater than 1,700 vehicles per hour warrant dual lane ramps.

(2) *Determination of Benefits*

The determination of the incremental benefits of a proposed EL-to-EL ramp is assessed through a comparison to a slip ramp connection. Once demand projections are determined for each scenario, an operational analysis is performed in accordance with the **FDOT Traffic Analysis Handbook**. The demonstrated tangible benefits to the operations of the system are assessed through reduced weaving volumes and improved speeds.

(3) *Consideration of Cost*

The total additional costs attributed to the implementation of the EL-to-EL ramps are compared to the incremental benefits identified in (2) above.

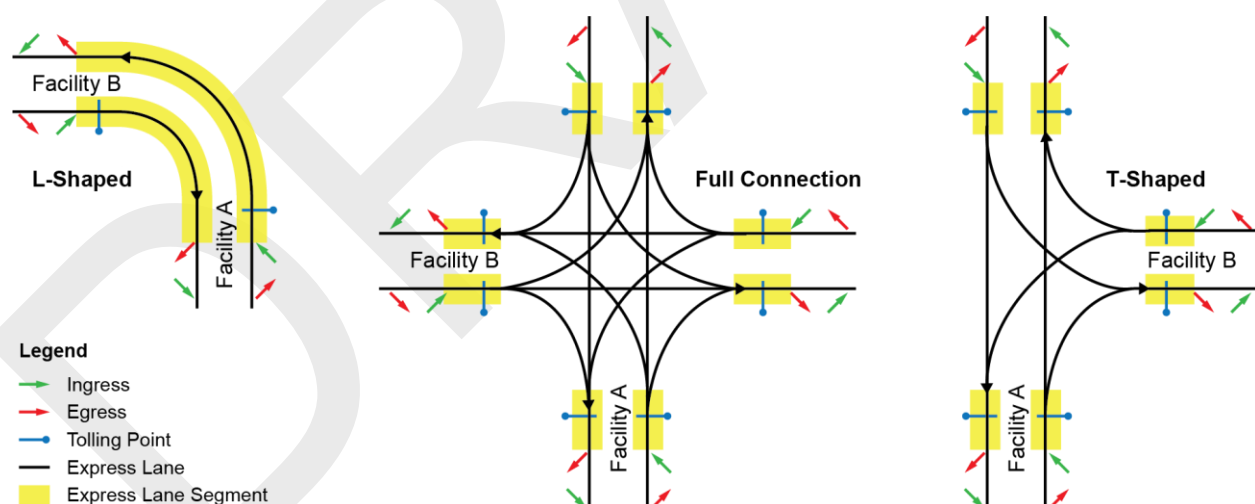
## 2.7.2 Toll Plan Considerations for EL-to-EL Ramp Connections

When EL-to-EL ramps are feasible, considerations regarding toll plans at the connections include the following:

- (1) *Location of Ingresses and Egresses*  
An egress from the express lanes is located at each approach to the ramp connections, providing drivers with an option to leave the express lanes if they choose not to use the EL-to-EL ramps. In addition, an ingress to the express lanes on both facilities is provided before each EL-to-EL ramp, with an egress following the tolling points once the driver passes through the connection.
- (2) *Location of Tolling Points*  
One tolling point is located on either side of the EL-to-EL ramps to optimize the management of traffic on the ramp and the connecting express lanes. All tolling point locations are required to be consistent with **General Tolling Requirements (GTR)**.

The preferred toll plan for each EL-to-EL ramp connection type is shown in **Figure 2.7**. To the greatest extent possible, these preferred toll plans are followed in the development of express lanes projects. Any modification to these preferred toll plans is required to be justified through an operational and geometric analysis comparing the preferred toll plan and the proposed modification.

**Figure 2.7: Preferred Toll Plan for EL-to-EL Ramps by Connection Type**



## 2.8 PROJECT PHASING

The available and useable widened lanes or express lanes need to be open to traffic as soon as practical. However, many express lanes projects are being implemented as phased segments of a larger corridor project or as part of a connection to a regional network. Phased implementation is usually necessary when delivering an entire corridor due to construction, operation sequencing, or other factors. In some cases, express lanes projects are being developed as an extension to an existing express lanes corridor. In any case, it is important to consider the interim phase(s) and ultimate configuration early in the planning process. The guidelines below are followed for project phasing:

- (1) *Interim and Ultimate Configuration Diagrams*  
Express lanes diagrams are prepared considering the interim condition and the ultimate configuration within a 20-year design horizon.
- (2) *Separate Interim Phase Diagrams*  
Express lanes diagrams show each interim phase in a separate diagram.
- (3) *Complete Segments Shown on Interim Phase Diagrams*  
Express lanes diagrams show complete segments (ingress followed by egress) for each interim phase so that the project can be opened as a stand-alone facility. Some corridors will operate interim express lanes conditions as projects are open to traffic. In other cases, a corridor will not operate express lanes until all express lanes projects within that corridor are ready to be open to traffic.
- (4) *Definition of Access Point Locations*  
To the greatest extent possible, access points are located in the ultimate condition. Every effort should be made to retain the same location of the access points through the interim phases of the project.

## 2.9 PLANNING PHASE CONSIDERATIONS BY LEVEL

For each phase of express lanes project development from longer term master planning to design and implementation, there are various items to consider for planning purposes. These items can be addressed during the project development cycle (Planning, PD&E, and Design), and are included in the ConOps documents. **Appendix 2 (C)** lists items that are considered when developing express lanes at regional, corridor, and project levels.



## Chapter 3

# TRAFFIC AND REVENUE STUDIES

### 3.1 GENERAL

A traffic and revenue (T&R) study evaluates the projected traffic demand on an express lanes project and estimates a multi-year, gross revenue forecast. Most T&R studies take between six (6) and eighteen (18) months to complete, depending on the complexity of the project being studied, and the level of detail and precision desired of the forecasts. All Florida Department of Transportation (Department) T&R studies, including those prepared for Florida's Turnpike Enterprise (Turnpike) and those prepared for the Districts and Central Office, are managed by the Express Lanes Planning Department. District T&R studies are developed in close coordination with the Project Finance Office (PFO) and the requesting District(s).

### 3.2 APPLICABLE PROJECTS

Traffic and revenue (T&R) studies are conducted for both Turnpike and District widening projects that include express lanes. In addition, T&R forecast updates are prepared annually for all express lanes projects that are open to traffic. T&R studies for the Turnpike are prepared by the Turnpike's General Consultant (Consultant). T&R studies for the Districts are prepared by a General Consultant (Consultant) procured by the Turnpike specifically for District T&R studies.

### 3.3 TIMING OF A TRAFFIC AND REVENUE STUDY

The timing of the development of a T&R study is extremely important to the preparation of an accurate forecast. A study that is prepared too far in advance of the project's Construction phase will likely have to be updated to ensure that what was studied is consistent with the actual project being built, and to confirm that major project data and assumptions impacting model results have not changed significantly.

Therefore, the preparation of a T&R study for a new express lanes project begins sometime after the completion of early project coordination and corridor set up (as defined in **FELM 2.4** and **FELM 2.6**), and commensurate with the project's Project Development and Environment (PD&E) phase. As part of the Design phase, the major project assumptions are finalized and incorporated into the development of the T&R study. If Construction phase funding has not been identified for the project, development of the study should be deferred until funding becomes available.

Annual updates of T&R forecasts for projects open to traffic are coordinated by the PFO and the Express Lanes Planning Department with the appropriate District(s) for programming of funds to complete the study. These updates are generally initiated in the beginning of July and completed by the end of December of the same year.

## **3.4 TYPES OF TRAFFIC AND REVENUE STUDIES**

The Department is responsible for determining the level of study to be performed. The types of traffic and revenue studies completed by the Department for new express lanes projects, from least to most detailed, include Sketch-Level, Planning-Level, and Investment-Grade Level. In addition, for express lanes projects that are open to traffic, annual traffic and revenue forecast updates are prepared. A brief description of each study type is provided below.

### **3.4.1 Level 1 – Sketch-Level Traffic and Revenue Study**

A sketch-level traffic and revenue study provides a basis for initial project screening, and is often used to determine if a project warrants the additional effort involved in a more detailed and comprehensive study. In some cases, a sketch-level study is prepared to provide a preliminary assessment of projected revenues for early financial planning. These studies are typically conducted prior to the PD&E phase, before many of the key project features have been established. They are prepared using existing data and may not include actual travel demand model runs. Sketch-level studies completed for projects moving forward typically need to be updated to a more detailed level of study in order to have more accurate information to include in a project's funding plan. These studies generally take six (6) months or less to complete.

### **3.4.2 Level 2 – Planning-Level Traffic and Revenue Study**

A planning-level traffic and revenue study provides a detailed assessment of the project, documents the project's viability, and creates a preliminary estimate of traffic and annual revenue forecasts for input into preliminary financial analysis. These studies are typically initiated during the Project Development and Environment (PD&E) phase, when the ingress and egress points and the express lanes diagram are developed. Close coordination with the PD&E phase is required for collecting traffic data and demand modeling data that is needed in the traffic and revenue study. Existing travel demand models are updated to include: current year traffic counts, supplemental traffic counts in the project area, speed and delay studies, model calibration for the subarea and in the corridor, review of socioeconomic data, representative corridor value of travel time savings (VTTS), and other updates, as needed. For District T&R studies, gross revenues are prepared to a Probability (P75) level of confidence. This means that there is a seventy-five percent (75%) likelihood that actual revenue will meet or exceed the forecast. These studies are normally completed in nine (9) to twelve (12) months.

### **3.4.3 Level 3 – Investment-Grade Level Traffic and Revenue Study**

An investment-grade level traffic and revenue study provides a forecast that is comprehensive enough for the results to provide “certified” revenue used by bond rating agencies and investors to evaluate the financial return on a project. It is performed during final Design, and includes a comprehensive update to the travel demand model that evaluates, as necessary, all major model inputs. An independent review of the socioeconomic data used in the travel demand model is conducted. A project-specific value of travel time savings (VTTS) prepared through a stated preference survey is

required for this level of study. These studies are normally completed in twelve (12) to eighteen (18) months.

#### **3.4.4 Annual Forecast Update**

Once express lanes projects are open to traffic, annual traffic and revenue forecast updates are performed. These forecasts, prepared by the Turnpike or District Consultant, are used by Turnpike Finance and PFO respectively, to update the Work Program and Finance Plan. Many of the steps in an annual traffic and revenue update are the same as other traffic and revenue studies. However, in an annual update, the Express Lanes Time of Day (ELToD) model reflects actual traffic and revenue data from both the existing facility and the adjacent express lanes network. In addition, these annual updates include a summary of the historical traffic and revenue on the express lanes facility, and a gross revenue, P75 forecast of the projected traffic and revenue, by fiscal year, for a minimum of a ten-year (10) period.

### **3.5 PROCESS FOR REQUESTING A DISTRICT TRAFFIC AND REVENUE STUDY**

A District Traffic and Revenue (T&R) study is requested by completing a project request form (**Appendix 3 (A)**) that is signed by the requesting District's Secretary, and submitting it to the Express Lanes Planning Department. The project request form is evaluated for completeness and a Consultant is assigned by Turnpike Management. The Express Lanes Planning Department coordinates with the District(s), PFO, and the Consultant to prepare a scope, schedule, and budget in accordance with the selected level of study as defined above in **FELM 3.4**. The District then coordinates with the Turnpike's Work Program staff to program the funds for authorization prior to commencement of the study.

It is important to note that the project request form requires the District appoint a study Project Manager who works closely with the Express Lanes Planning Department and PFO throughout the development of the study to ensure all project inputs are accurate and current. The District's Project Manager is essential for effective project coordination.

### **3.6 DEVELOPMENT OF A DISTRICT TRAFFIC AND REVENUE STUDY**

Once a study has been authorized to proceed, the Express Lanes Planning Department works closely with the District's Project Manager, PFO, and the Consultant to officially kick off the project.

All Department T&R studies are developed through a program approach using a comparable methodology to ensure consistency of forecasts. This enables the PFO to evaluate District projects under the same criteria for conducting a balanced prioritization of projects statewide.

### 3.6.1 Traffic and Revenue Program Approach

The T&R study program approach follows the same steps regardless of the study type. An initial evaluation of the study area is important for the development of a comprehensive overview of the project corridor. Field reviews and traffic data collection are essential elements to provide an understanding of the existing corridor conditions. A field review is conducted either in person or virtually utilizing an online mapping application. At a minimum, data collection includes a summarization of existing traffic count information from local and/or state agency traffic count databases. For planning-level and investment-grade level studies, additional data collection efforts are needed, including but not limited to, supplemental traffic counts by hour, corridor speed and delay data, origin and destination information, and the representative corridor's value of travel time savings (VTTS).

### 3.6.2 Travel Demand Models

The travel demand model selected for a T&R study is a version of the Department District model, or a Metropolitan Planning Organization (MPO) or regional model that includes the project corridor and study area. In some instances, a statewide or merged model may be required due to the project location and/or existing model boundary constraints. These models are developed using Florida's Standard Urban Transportation Model Structure (FSUTMS) and provide the basis for the primary Express Lanes Time of Day (ELToD) model inputs of total corridor traffic, the subarea network, and trip tables. Planning-level and investment-grade level studies include model enhancements within the project corridor subarea and a re-validation to the latest available traffic data.

### 3.6.3 Express Lanes Time of Day (ELToD) Model

The Express Lanes Time of Day (ELToD) model is a traffic assignment model designed to estimate the split of project traffic between the general use or general toll lanes, and the express lanes by direction during each hour or sub-hour of the day. ELToD also provides the associated toll amounts for the express lanes by time interval and by direction. It is the Department's preferred tool for forecasting the traffic demand for express lanes projects, and works in conjunction with Florida's travel demand models described above in **FELM 3.6.2**.

There are two (2) types of the ELToD Model:

(1) *ELToD – Static Assignment Corridor Model*

The static assignment corridor model is used for identifying the percent share of toll traffic on one specific corridor, for either standalone toll facilities or express lanes. This model uses one optimal toll amount for each toll gantry based on traffic assignment or data input.

(2) *ELToD – Dynamic Traffic Assignment Network Model*

The dynamic traffic assignment (DTA) network model is used for identifying the percent share of toll traffic on several facilities within an express lanes network. This model provides one optimal toll amount for each toll gantry based on traffic assignment by time period.

The Department coordinates with the Consultant assigned to a T&R study to determine the appropriate model to use for each project. The latest versions of the ELToD model types can be requested online at the following website:

[http://www.fsutmsonline.net/index.php?/model\\_pages/modDT1/index/](http://www.fsutmsonline.net/index.php?/model_pages/modDT1/index/).

### **3.6.4 Traffic and Revenue Forecasts**

Traffic and revenue studies provide both traffic and revenue forecasts for the proposed express lanes facility. In each study, traffic forecasts are developed for the express lanes and the general use or general toll lanes by direction and by hour for a minimum of two (2) future years. Estimated express lanes toll amounts are included in the study, and are used in the development of a gross revenue forecast for the express lanes project. The study does not include an evaluation of the project's financial feasibility. All major assumptions related to the development of both the traffic forecasts and the revenue forecasts for the express lanes project are required to be clearly documented in a T&R study report or memorandum. The study documentation is required to comply with the Department's established format provided by the Express Lanes Planning Department.

## **3.7 COORDINATION WITH THE PROJECT FINANCE OFFICE**

For District projects, the gross revenue forecasts prepared for express lanes T&R studies are used to assist in the development of a project financing plan which is coordinated with the PFO. Proposed Turnpike projects and Turnpike improvements are governed by the requirements for economic and environmental feasibility as outlined in **Chapter 338, Florida Statutes**.

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## Chapter 4

### DESIGN CONSIDERATIONS

#### 4.1 GENERAL

Consistency in the design of express lanes is essential to their success from operational, safety, and customer perspectives. The design, construction, and operation of express lanes must be consistent, yet flexible, across Florida Department of Transportation (Department) Districts and with other agencies within the project region. Every project is designed for site-specific constraints, while providing customers with a consistent experience when using express lanes facilities. To maintain consistency, Florida's Turnpike Enterprise (Turnpike) is required to be consulted as the Districts develop concept plans, requests for proposal (RFPs), and design plans.

This **Chapter** covers all significant design elements that are considered when developing express lanes projects. These elements include separation and access types, cross-slope considerations, signing and pavement markings, intelligent transportation systems (ITS) elements, tolling equipment, and other design considerations. Specific design criteria, standardized construction plans and specifications, and other guidance can be found in the following documents:

- (1) ***FDOT Design Manual (FDM)***
- (2) ***FDOT Standard Plans for Road and Bridge Construction***
- (3) ***FDOT Standard Specifications for Road and Bridge Construction***
- (4) ***FDOT Traffic Engineering Manual (TEM)***
- (5) ***General Tolling Requirements (GTR)***
- (6) ***Manual on Uniform Traffic Control Devices (MUTCD)***
- (7) ***Turnpike Design Handbook (TDH)***

##### 4.1.1 District and Turnpike Express Lanes Responsibility Matrix

Express lanes projects require close coordination between the Turnpike and the District(s). The District and Turnpike Express Lanes Responsibility Matrix (Responsibility Matrix) identifies the breakdown of roles and responsibilities for elements of an express lanes facility, including roadway and tolling infrastructure, design, operations, maintenance, ownership, and any financial obligations. A Responsibility Matrix should be drafted in accordance with **FELM 1.5.1** to identify design responsibilities between the Turnpike and the District(s). The Responsibility Matrix Template is included in **Appendix 1 (C)**.

### 4.1.2 Design-Build Request for Proposal Process

The District is required to coordinate the development of all Design-Build requests for proposal (RFPs) for express lanes projects with the Turnpike Design Project Manager (PM) that has been assigned to that project. The Turnpike provides input on scope elements for express lanes projects and additional language for the RFP that are important for the ultimate success of the project. The Turnpike Design PM can provide an example of additional RFP language to help facilitate consistent RFP development.

## 4.2 EXPRESS LANES DIAGRAMS AND CONCEPT PLANS

Early design includes the conversion of the express lanes diagrams, developed as part of the corridor development process as described in **FELM 2**, into concept plans. Some corridors may have a phased implementation of individual express lanes segments. Others will not implement express lanes until the entire corridor is complete. In order to provide operable express lanes segments under interim and ultimate conditions, the concept plans need to consider the following: proposed connections to adjacent express lanes, proposed connections to general use or general toll lanes, and the ultimate infrastructure requirements (e.g. gantry spans, toll site locations, signing/ITS infrastructure). This infrastructure is needed for the subsequent implementation phases of connected express lanes segments.

## 4.3 SEPARATION TYPES

Express lanes are limited-access facilities that typically operate adjacent to general use or general toll lanes. They are required to be separated from the general use or general toll lanes, and the separation technique is one of the critical design decisions that influences the feasibility, operations, and constructability of an express lanes project. The District or Turnpike determines the separation type on a project by project basis with consideration of the information provided in **FELM 4.4**. The four (4) separation types that can be used for express lanes projects are defined in the **Subsections** below. Design of separation types is included in **FDM 211.3.3**. The use of express lane markers must conform to the guidelines published in **FDOT Development Specification 993**.

### 4.3.1 Buffer Separation with Express Lane Markers

Buffer separation with express lane markers uses a combination of pavement markings with a series of high-performance tubular pylons or delineators, called express lane markers, to separate the express lanes from the general use or general toll lanes. Express lane markers are more effective than pavement markings alone to provide visual separation, maintain lane positions, discourage crossover access movements, and reduce access violations.



### **4.3.2 Wide Buffer Separation**

Wide buffer separation can be grassed or paved areas. Longer transition distances are required to traverse wide buffers. Wide buffers may provide additional space for signs, lighting, and ITS equipment. Roadside safety elements between the express lanes and the general use or general toll lanes (e.g. guardrail, cable, and express lane markers) are required to be evaluated in all cases. Design standards for wide buffers, including shoulder and clear zone requirements, are defined in **FDM 211**.

For grassed wide buffer separation, drainage can be facilitated using grassed wide buffers by increasing pervious area and providing better storm water collection. Drainage must be provided to minimize water accumulation in the vehicle recovery area. For paved wide buffer separation, future expansion can be facilitated by the conversion of wide buffers to additional lanes.

### **4.3.3 Barrier Separation**

Barrier separation uses continuous concrete walls to separate the express lanes from the general use or general toll lanes.

### **4.3.4 Grade Separation**

Grade separation places the express lanes at different elevations from the general use or general toll lanes.

## **4.4 DETERMINING THE SEPARATION TYPE**

Project implementation costs, right of way (ROW) needs, operation and maintenance costs, safety and operational characteristics, type of enforcement, and traffic incident management (TIM) are greatly influenced by the separation type used. An analysis is conducted during the Planning and Project Development and Environment (PD&E) phases to determine the appropriate separation type.

Consideration is given to maintaining corridor consistency. Additional considerations can include flexibility to accommodate future corridor growth and multimodal envelopes. If the project has adequate ROW and there is a need to accommodate future project phasing, express lanes configurations that include a wide buffer can provide room for future pavement when the additional lane is needed.

Advantages and disadvantages of the four allowable separation types are provided in **Table 4.1**, below.

**Table 4.1: Considerations for Selection of Separation Type**

Type of Separation	Access	Cost / ROW	Retrofit / Expansion	Incident Management	Operations
Buffer Separation with Express Lane Markers	Possible access violations	Reduced construction costs and ROW needs; Potential for additional costs for maintenance and enforcement of express lane markers	Facilitates future expansion	Improved access; Limited area for staging during recovery operations	Potential friction between high-speed express lanes and low-speed general use lanes
Wide Buffer Separation	Possible access violations	Additional costs and ROW needs	Facilitates future expansion	Improved access; Additional staging area for emergency responders	Improved safety and operations
Barrier Separation	Eliminates access violations	Additional costs and ROW needs	Limited retrofit and future expansion	Increased response time due to limited access; Limited area for staging during recovery operations.	Improved safety and operations
Grade Separation	Eliminates access violations	Additional costs and ROW needs	Limited retrofit and future expansion	Increased response time due to limited access; Limited area for staging during recovery operations.	Improved safety and operations

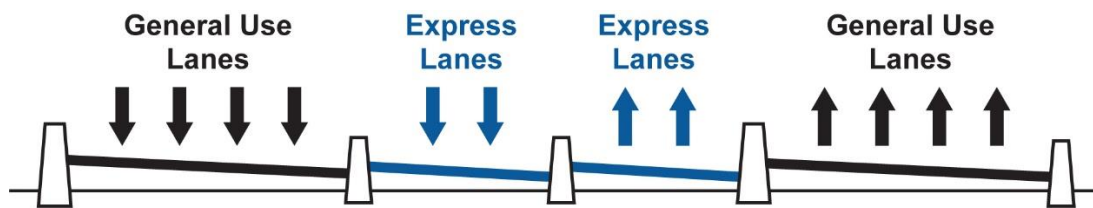
## 4.5 CROSS SLOPE CONFIGURATIONS

Two different cross slope configurations can be implemented for express lanes: non-coplanar and coplanar. Design criteria for cross slopes can be found in the **FDM 211.2**.

### 4.5.1 Non-Coplanar Configuration

A non-coplanar configuration breaks the elevation of the roadway between the express lanes and general use or general toll lanes, as shown in **Figure 4.1**.

**Figure 4.1: Non-Coplanar Configuration – Barrier Separation**

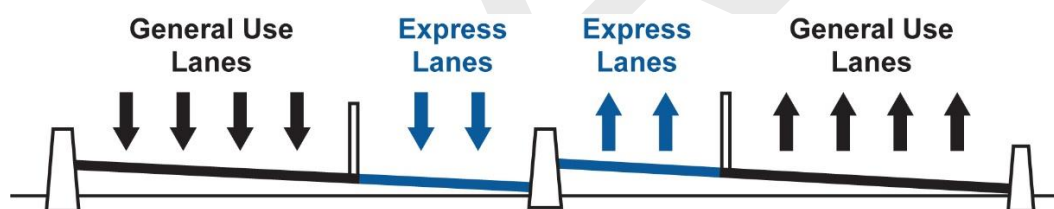


The non-coplanar configuration can be used only with barrier separation and grassed wide buffer separation. This configuration provides better drainage design options and minimizes embankment requirements. However, this configuration may require major reconstruction for future expansion.

#### 4.5.2 Coplanar Configuration

A coplanar configuration has a continuous cross slope along the express lanes and general use or general toll lanes, as shown in **Figure 4.2**.

**Figure 4.2: Coplanar Configuration – Buffer Separated with Express Lane Markers**



A coplanar configuration can be used with all separation types, except for grade separation. This configuration requires additional drainage design considerations since the entire pavement width drains to one side of the facility. The coplanar design has lower long-term expansion costs, as additional lanes can be added to the outside of the typical section, without any changes to the existing cross slope.

The applicable cross slope options by type of separation are summarized in **Table 4.2**.

**Table 4.2: Cross Slope Configurations by Separation Type**

Separation Type	Non-Coplanar	Coplanar
Buffer Separation with Express Lane Markers	N/A	X
Wide Buffer (Grassed Median)	X	X
Wide Buffer (Pavement Markings)	N/A	X
Barrier Separation	X	X
Grade Separation	N/A	N/A

## 4.6 ACCESS TYPES

This **Section** describes the access types used on Florida's express lanes. The advantages and disadvantages of each access type must be evaluated on a case by case basis. Factors for determining the location of access points are included in **FELM 2.6.3**.

### 4.6.1 Slip Ramps

Slip ramps provide connections between the express lanes and general use or general toll lanes using breaks in the separation type. Slip ramps allow for either ingress or egress, and are typically facilitated by an exclusive lane. Additional pavement width is required to provide the transition needed to create the slip ramps. Slip ramps are commonly used with barrier separation, but can also be used with buffer separation.

Slip ramps reduce the potential for unstable flow created by the speed differential between the express lanes and general use or general toll lanes at the access points. Special consideration is given to operations during peak congestion times to prevent spillback of the egress traffic into the express lanes. Design considerations are also made to minimize the potential of unintended movements in slip ramps.

### 4.6.2 Weave Lanes

Weave lanes provide an additional lane to accommodate weaving movements. This type of access allows the weaving and speed changes required for merging between the general use or general toll lanes and the express lanes to occur in a separate weave lane. Consider transit vehicle operations when designing the required length of weave in locations where heavy transit operations are planned or anticipated.

### **4.6.3 Weave Zones**

Weave zones consist of a short break in the separation type at specific locations allowing for simultaneous ingress and egress. Weave zones do not require extra roadway width and are used to retrofit existing highways. Consider transit vehicle operations when designing the required length of weave in locations where heavy transit operations are planned or anticipated. Weave zones are not desirable for barrier separated facilities due to safety and operational issues.

### **4.6.4 Direct Connect Ramps**

Direct connect ramps provide access to and from the express lanes using dedicated, grade-separated ramps. They are used for system-to-system connections between express lanes facilities, toll facilities, major arterials, park-and-ride facilities, and transit facilities. The advantages and disadvantages of direct connect ramps must be evaluated before deciding to proceed with this type of access. Additional information about express lanes to express lanes direct connections can be found in **FELM 2.7**.

### **4.6.5 Design of Access Points**

Access points are designed in accordance with the criteria established in the **FDM 211.14**.

## **4.7 SIGNING AND PAVEMENT MARKINGS**

Consistent signing among all express lanes statewide is essential for facility usage and public acceptance. Within the **MUTCD**, express lanes are referred to as priced managed lanes and sign guidelines are categorized under **Chapter 2G – Preferential and Managed Lane Signs**. The Department's express lanes signs are detailed in **TEM 2.42**. Pavement marking guidelines are included in **TEM 4.5** and **FDM 230**.

## **4.8 INTELLIGENT TRANSPORTATION SYSTEMS**

Intelligent Transportation Systems (ITS) components are important for the operation of express lanes. The status of express lanes and the toll amounts are displayed on dynamic message signs (DMSs). Cameras are used for surveillance of traffic and verification of the messages displayed on the DMSs. Vehicle Detection Systems (VDS) provide real-time traffic data. The communication network relays messages between the field and the Traffic Management Centers (TMCs).

A Systems Engineering Management Plan (SEMP) is prepared prior to developing the system requirements for the express lanes network. As express lanes projects are implemented, the existing communications system is evaluated and upgraded if needed. Redundancy across the communications network is required for reliable express lanes operations with minimal downtime. Another early design consideration during the express lanes implementation includes planning for any expansions related to the TMC building infrastructure to handle these new operations.

Design criteria, standards, and specifications for express lanes ITS elements are contained in **FDM 233, FDOT Standard Plans for Road and Bridge Construction 600's**, and **FDOT Standard Specifications for Road and Bridge Construction 700**. Requirements for the tolling communication network are in the **GTR**.

## 4.9 TOLL SITING

Toll siting is necessary to determine the best location(s) for toll site infrastructure for an express lanes project. A key aspect is locating a toll site as close to an express lanes ingress as possible. A Toll Siting Technical Memorandum (TSTM) is required for all Department express lanes projects. The criteria and template for the TSTM are included in the **GTR**.

### 4.9.1 Toll Siting Technical Memorandum

The TSTM documents the evaluation of a project's toll site infrastructure in relation to the ingress of the express lanes segment, the roadway geometry, utilities, and other factors. Express lanes projects typically have multiple toll sites. Alternative locations are evaluated for each toll site, and the TSTM identifies the most appropriate location. The development of the TSTM complies with the following:

- (1) *Content*  
Toll and data gantries are located no more than one (1) mile from the ingress point. Full requirements for the locations of toll and data gantries are included in the **GTR**.
- (2) *Timing*  
In general, the TSTM must be approved before the commencement of the Design phase. For Design-Build projects, the TSTM is developed as part of the Design-Build request for proposal (RFP).
- (3) *Process*  
The review of the TSTM is coordinated with the Turnpike Tolls System Department. A draft TSTM is reviewed through the electronic review comments (ERC) system, and a final TSTM is prepared after all ERC comments have been addressed.

### 4.9.2 Toll Siting for Express Lanes to Express Lanes Direct Connections

Toll site locations for express lanes to express lanes (EL-to-EL) ramps are developed according to the guidelines established in the preferred toll plans, as described in **FELM 2.7.2**. Coordinate with Turnpike when geometric and physical constraints prohibit the placement of toll gantries as specified in the **GTR**.

## 4.10 INCIDENT MANAGEMENT AND ENFORCEMENT

Coordination between Design and Operations staff assures that the preferred geometric design concept supports incident management and enforcement operations. These operations are examined on a project-specific basis to identify and incorporate required design elements. Incident management plans are critical design inputs for the express lanes project.

The express lanes Project Concept of Operations (ConOps), as defined in **FELM 2.5.2**, provides project level details on the roles and responsibilities of incident responders. Design elements such as roadside toll equipment, emergency turn-around areas, access to the express lanes, and emergency refuge areas may be necessary to support the operational needs of an express lanes project. Specific incident management considerations are addressed in **FELM 6**. Design of the emergency refuge area (ERA) may include staging areas and incident investigation areas. See **FDM 211.4.5** for emergency refuge area criteria.

## 4.11 TEMPORARY TRAFFIC CONTROL PLANS

Temporary Traffic Control Plans (TTCP) for projects with operating express lanes are subject to additional considerations. The TTCP for these projects will be addressed on a case by case basis and are required to be coordinated, reviewed, and approved by Turnpike Design and Operations staff.

## 4.12 ROADWAY DESIGN CRITERIA

Most design criteria for express lanes follows the general design criteria for the roadway. Specific criteria can be found in **FDM 201** and **FDM 211**.

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## Chapter 5

### TOLL COLLECTION

#### 5.1 GENERAL

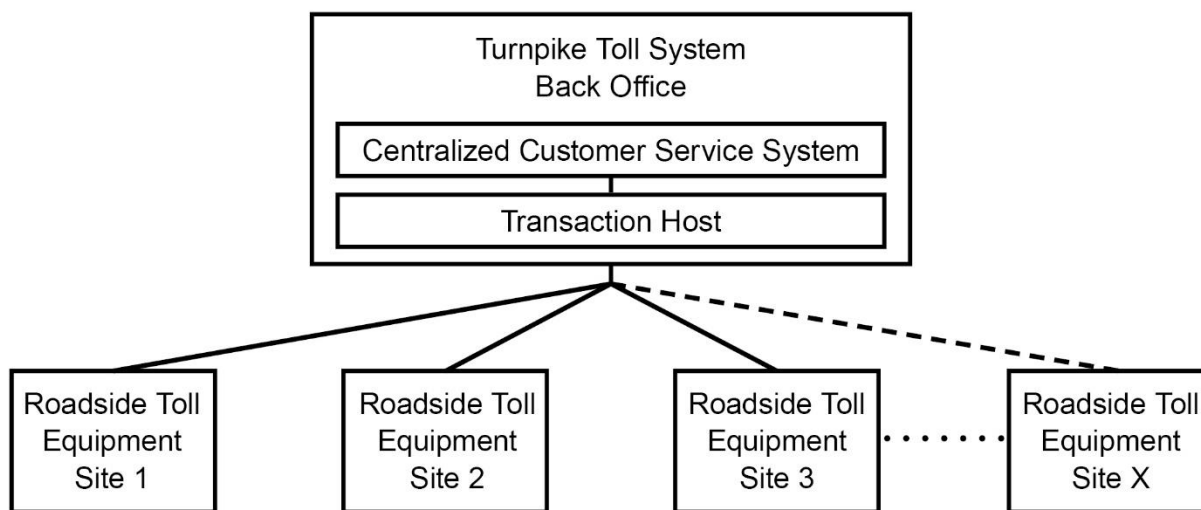
The tolling of the Department's express lanes is established by **Section 14-100.003, Florida Administrative Code**. The ultimate goal is to manage traffic demand through the use of dynamic pricing in order to maximize vehicle throughput in the express lanes. Florida's Turnpike Enterprise (Turnpike) is responsible for the collection of express lanes tolls for the Florida Department of Transportation (Department). This **Chapter** provides an overview of the Turnpike's toll collection system and the interface with District intelligent transportation systems (ITS). Policies related to tolling are located in **FELM 1**.

#### 5.2 TOLL COLLECTION SYSTEM

The Turnpike is responsible for collection of tolls on all Turnpike and Department-owned and/or operated facilities. The toll collection system comprises the Turnpike Toll System Back Office (Back Office) and the roadside toll equipment. The Back Office provides customer service and account management, including posting toll amounts to accounts, issuing customer statements, and processing toll violations. The roadside equipment captures vehicle transactions and reports them to the Back Office.

For express lanes projects, the toll collection system interfaces with the District Traffic Management Center (TMC) to obtain toll amount information. The toll collection system is shown in **Figure 5.1**, and defined in the Subsections below.

**Figure 5.1: High-Level Toll System Components Block Diagram**

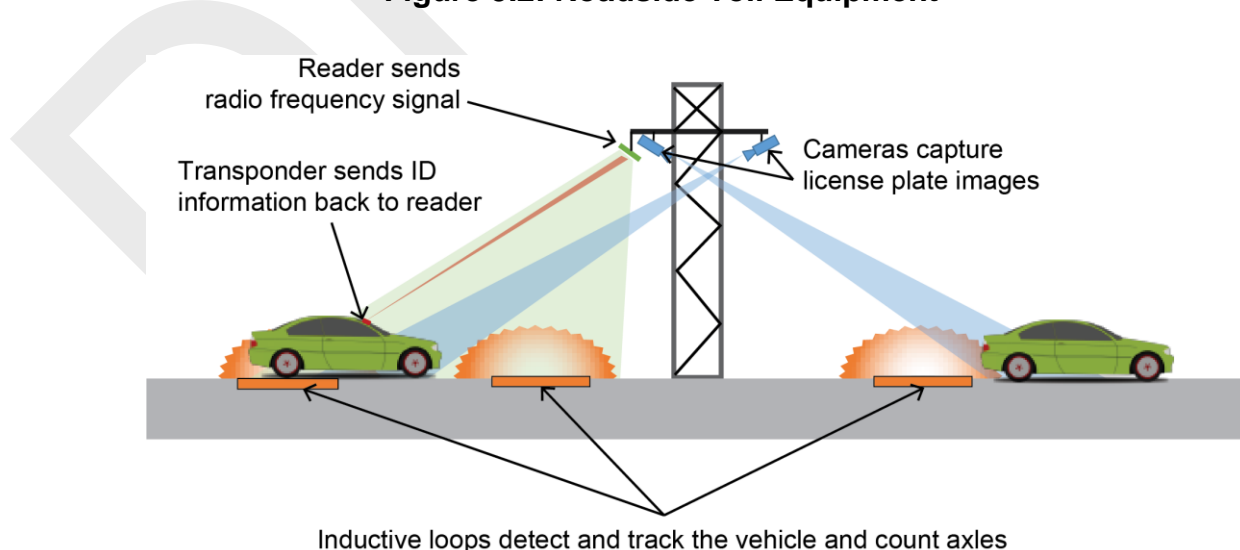


### 5.2.1 Roadside Toll Equipment

Roadside toll equipment includes the technologies deployed at the roadside (inductive loops, radio frequency (RF) readers and antennas, and enforcement cameras) and the toll equipment building. These components are defined below.

- (1) *Inductive Loops*  
Identify transactions by detecting and recording vehicles' exact locations when their axles pass over the inductive loops installed in the roadway. This location information is used to trigger enforcement cameras. The loops are also used to determine vehicle separation distance and vehicle classifications.
- (2) *Radio Frequency Readers and Antennas*  
Perform automatic vehicle identification (AVI). As a vehicle approaches the gantry, the SunPass® transponder receives an incoming signal, and a signal is reflected back to the reader with the transponder's information.
- (3) *Enforcement Cameras*  
Capture front and rear license plate images of vehicles in the express lanes. Images are taken for every vehicle that passes under the toll gantry and the license plate information is matched to a customer's account or used for billing purposes.
- (4) *Toll Equipment Building*  
Contains servers, network switches, and uninterruptable power supplies under a climate-controlled environment. The servers process the data and develop the transactions. Transactions are then transmitted to the Transaction Host (Host) via fiber optic network and/or high-speed leased circuit telecommunication lines. The transactions are also stored temporarily in this structure as a back-up, in the event of a communications failure or other system failure events. The servers also send and receive information to/from the Host. The roadside toll equipment technologies are illustrated in **Figure 5.2**.

**Figure 5.2: Roadside Toll Equipment**



## 5.2.2 Turnpike Toll System Back Office

The Turnpike Toll System Back Office (Back Office) comprises the Transaction Host (Host) and the Centralized Customer Service System (CCSS). The Back Office utilizes staff, as well as computers and servers, for the processing of all toll transactions. Staff provides customer service and completes manual processes such as: reviewing license plate images, processing violations, and reporting and monitoring activities.

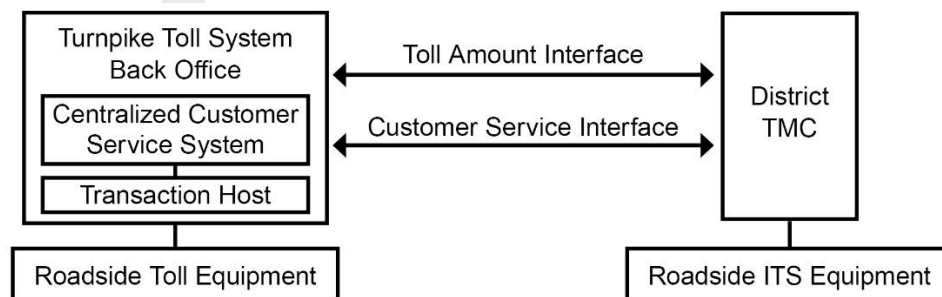
- (1) *Transaction Host*  
The Turnpike processes all tolling transactions, including those for toll-exempt vehicles, for the Department through the Host. The Host serves as the clearinghouse between the toll gantries on the express lanes and the CCSS, where customer accounts are maintained.
- (2) *Centralized Customer Service System*  
The CCSS is part of the Back Office and is responsible for processing toll violations and managing accounts.

## 5.2.3 Interface

The Turnpike toll collection system interfaces with the District Traffic Management Center (TMC) to support express lanes operations. Specifically, the toll amount data is shared between the Turnpike and the District. The Turnpike needs the toll amount to process all toll transactions and the District uses the toll amounts to operate the express lanes. The communications and interactions between the systems are defined by interface control documents (ICDs) which are maintained by the Turnpike. The two (2) key interfaces are explained below and shown in **Figure 5.3**.

- (1) *Toll Amount Interface*  
This interface is used by the Turnpike to receive the final toll amount information from the TMC.
- (2) *Customer Service Interface*  
This interface allows the Turnpike Customer Service Representatives at the CCSS to look at information that was posted on the Toll Amount Sign when customers have questions regarding transactions.

**Figure 5.3: Typical Toll System Interfaces**



### 5.3 TOLL AMOUNTS AND PRICING

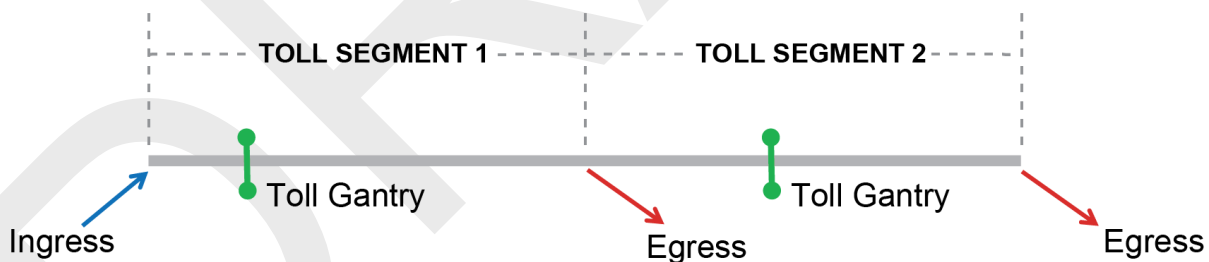
Express lanes in Florida are operated using dynamic pricing, which means that the toll amounts are adjusted based on speed and volume in the express lanes. On a temporary basis, other operating modes can be used for operational purposes, as identified in District-defined, project-specific operating procedures that are developed in coordination with the Turnpike and the Central Office Traffic Engineering and Operations office.

Toll amounts are determined by the Statewide Express Lanes Software (SELS). All FDOT District Traffic Management Centers use SELS to operate each of the express lanes facilities. The goal of the SELS algorithm is to promote free-flow traffic and maximize throughput. Under normal operating conditions, toll amounts are updated in 15-minute intervals (or less than 15 minutes) by SELS. Additional information on SELS can be found in **FELM 6**.

### 5.4 EXPRESS LANES TOLL SEGMENTS

Per **FELM 1.2.2**, tolls in the express lanes are charged on a per-segment basis. Express lanes toll segments and corresponding toll gantries are illustrated in **Figure 5.4**. A toll segment is defined as the distance between the customer's point of ingress to the first available egress as shown in **Toll Segment 1** below. Additional toll segments are defined by the distance between subsequent exits as shown in **Toll Segment 2** below. Only one (1) toll gantry is placed on each toll segment.

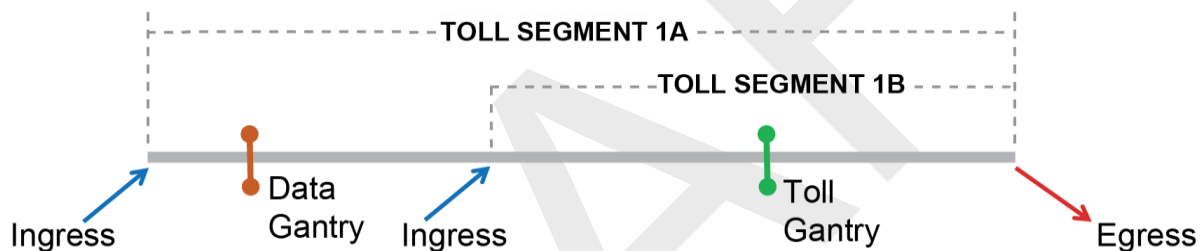
Figure 5.4: Definition of a Toll Segment



A toll segment can have successive ingresses, as shown in **Figure 5.5**. In this case, the toll segment is either the distance from the first of the successive ingresses to the first available egress or the distance from the second of the successive ingresses to the first available egress as shown in **Toll Segments 1A** and **1B** below. The toll amount is determined based on the speed and volume between the first ingress and the first available egress.

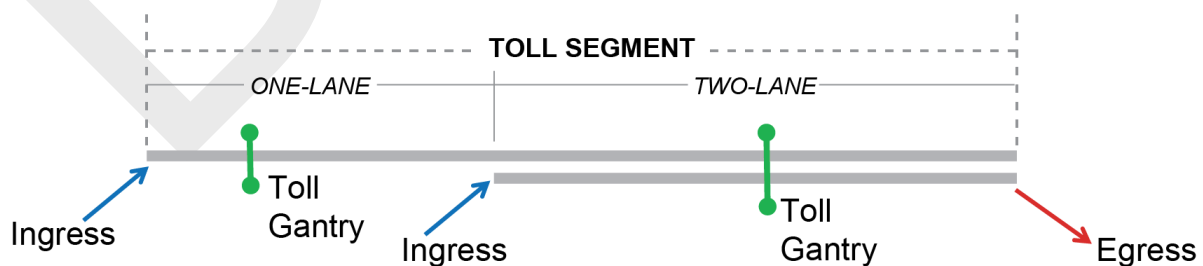
Data gantries are required to be placed between successive ingresses. Data gantries do not charge a toll, but rather collect the information needed to accurately identify the customer's entry into the express lanes. This identifies customers who enter prior to the last of the successive ingresses, and traverse a longer distance to the toll gantry, as shown in **Toll Segment 1A** below.

**Figure 5.5: Definition of a Toll Segment for Successive Ingresses**



When a toll segment transitions from one-lane to two-lanes, via an intermediate ingress, a toll gantry (rather than a data gantry) is placed between the successive ingresses, as shown in **Figure 5.6**. This allows for more effective congestion management of the one- and two-lane portions of the toll segment.

**Figure 5.6: Definition of a Toll Segment for Transitions from One to Two Express Lanes**



## 5.5 DISPLAYING TOLL AMOUNTS

Toll amounts for the express lanes are displayed on a Toll Amount Sign (TAS). A customer in the general use or general toll lanes must be able to see a TAS which displays the toll amount that will be charged for up to three (3) destinations. Each possible express lanes exit with the corresponding destination is provided with the associated toll amount. The toll amount seen by the customer on the TAS is locked in upon entry to the express lanes for travel to the destinations shown on the sign. Therefore, the customer will be charged no more than what is posted on the TAS for traveling to the destinations shown, even if the toll amounts change after the customer enters the express lanes. An example TAS, shown in **Figure 5.7**, is provided for illustrative purposes only. The **TEM 2.42** contains more information on signing for express lanes, including requirements for the TAS.

Figure 5.7: Example Toll Amount Sign



## Chapter 6

# EXPRESS LANES OPERATIONS

### 6.1 GENERAL

Express lanes system operations greatly impact key project development decisions from planning through construction, and are therefore considered early in the project development process. Project-specific characteristics can result in operational differences. These characteristics include, but are not limited to, ingress and egress design and location, separation type between the express lanes and the general use or general toll lanes, reversibility of the express lanes segment, and/or the use of other transportation systems management and operations (TSM&O) strategies along the corridor.

As discussed in **FELM 2.6.2**, the Express Lanes Diagram depicts the overall operational features of a corridor. The development of this document is coordinated with Turnpike Tolls through the Turnpike Design Project Manager.

### 6.2 CONCEPT OF OPERATIONS

The Concept of Operations (ConOps) defines the environment in which the express lanes will operate, derives the high-level requirements used to develop the express lanes system, and provides the criteria to be used for validation of the completed express lanes system. For more information on the different types of ConOps and their relationship to each other, refer to **FELM 2.5**.

For express lanes operations, the project ConOps establishes the roles and responsibilities of incident responders, express lanes operators, and other personnel. It is also referred to when developing additional operational documents such as incident management plans, standard operating procedures/guidelines, and interagency communication guidelines.

### 6.3 TRAFFIC MANAGEMENT CENTERS

The Traffic Management Center (TMC) disseminates traffic information to the traveling public. It houses operators and coordinates closely with other operation and/or dispatch partners such as Florida Highway Patrol (FHP), local law enforcement, and fire/rescue.

Additional TMC resources may be needed to manage the operations of express lanes projects. Prior to opening an express lanes project, a plan is developed for adding express lanes personnel (e.g. operators) and infrastructure (e.g. building, equipment, work stations). This plan should be developed as early as possible in order to allow

sufficient time for training of the TMC operators and implementation of any infrastructure modifications. The District TMC staff is responsible for the following:

- (1) Monitoring the traffic and roadway in the express lanes and general use or general toll lanes using cameras and vehicle detectors;
- (2) Performing incident management including incident response coordination;
- (3) Dispatching Road Rangers to clear incidents, remove debris, and assist stranded motorists;
- (4) Monitoring vehicle detection devices and equipment to identify any device or equipment failures;
- (5) Conducting traffic management for express lanes, ramp signal operations, and arterial operations coordination; and
- (6) Monitoring express lanes device and system health, and reporting damage to the facility and tolling system.

## **6.4 STATEWIDE EXPRESS LANES SOFTWARE**

The Statewide Express Lanes Software (SELS) is used on all express lanes projects to dynamically calculate the toll amount based on congestion in the express lanes. SELS is currently implemented as a subcomponent in the Operations Task Manager (OTM) software. OTM is a suite of software applications designed to assist and enhance daily TMC operations. It interacts with external systems including SunGuide®, the Turnpike Toll System Back Office (Back Office), and local email, file, and database systems. SELS is one (1) of the thirteen (13) modules within the OTM.

### **6.4.1 Functions of SELS**

SELS uses traffic data received from traffic detectors to perform the following:

- (1) Calculate express lanes toll amount;
- (2) Perform toll setting for each express lanes segment;
- (3) Post toll amount and lane status messages through SunGuide® Software;
- (4) Verify and document that the toll amount and lane status messages are accurate and displayed properly;
- (5) Associate SunGuide® events with tolling conditions;
- (6) Maintain toll records;
- (7) Communicate toll amounts to the Back Office;
- (8) Provide interfaces with SunGuide® to receive data from real-time monitoring devices;
- (9) Analyze historical traffic patterns; and
- (10) Generate reports.

### **6.4.2 Toll Setting Parameters**

There are three (3) configurable tables used by SELS to determine the toll amount: (1) Level of Service (LOS) Table, (2) Delta-Density Table, and (3) Time of Day (ToD) Table. These tables contain the toll setting parameters and are described below.



- (1) *Level of Service (LOS) Table*  
Contains the traffic density (TD) values and the corresponding variable toll ranges associated with each LOS value, A through F.
- (2) *Delta Density Table*  
Contains toll increments (either an increase or a decrease) used to calculate the toll for a specific interval. Toll increments are based on the current traffic density (TD) and the change in TD compared to a previous interval.
- (3) *Time of Day (ToD) Table*  
Automates the tolls based on historical data that specifies the toll in effect for each interval during each type of day (Weekday, Weekend, or Holiday/Special Event). This table is only used on a temporary basis, when there is no data available from detectors to calculate the toll. As soon as detector operation has been restored, SELS automatically reverts to using the LOS and Delta-Density tables for determining toll amounts.

#### **6.4.3 Process to Establish or Amend Toll Setting Parameters**

The District Traffic Operations Engineer (DTOE) is responsible for developing the initial LOS, Delta-Density, and ToD Tables. Both the initial establishment of toll setting parameters and any changes or updates are required to be coordinated with the Turnpike, and approved by the FDOT Secretary, using the process outlined below.

- (1) *DTOE*  
The DTOE initiates the request for establishing or changing the toll setting parameters. The request is submitted to the Turnpike DTOE and the State Managed Lanes Engineer, with a copy provided to the District Secretary.
- (2) *Turnpike DTOE*  
The Turnpike DTOE reviews, and if concurs, forwards the recommendation to the Turnpike Director of Transportation Operations and Director of Toll Systems for their concurrence.
- (3) *Turnpike Directors*  
Upon concurrence, the Turnpike Director of Transportation Operations and the Director of Toll Systems forward the recommendation to the Turnpike Executive Director.
- (4) *Turnpike Executive Director*  
Upon concurrence of the Turnpike Executive Director, the recommendation is coordinated with the District Secretary and forwarded for review to the Chief Engineer's Office, with a copy to the State Managed Lanes Engineer.
- (5) *Assistant Secretary for Engineering and Operations*  
The Chief Engineer submits the recommendation to the Assistant Secretary for Engineering and Operations.
- (6) *FDOT Secretary*  
The FDOT Secretary provides final approval of the recommendation prior to implementation.

If concurrence is not reached at any step in the process outlined above, the Turnpike, Central Office, and the District work together to address the concerns and revise the request. The revised request will then go through the same process.

#### 6.4.4 Configuration of Express Lanes Segments

Express lanes segments must be configured in the SELS software. The process for SELS configuration is outlined in the ***Operations Task Manager (OTM) Configuration User Manual, Section 2, Express Lanes Module (ELM) Configuration***. The OTM Configuration User Manual can be accessed through the Statewide Traffic Engineering and Operations SharePoint site.

### 6.5 MONITORING OF EXPRESS LANES OPERATIONS

In order to monitor express lanes operations, the Districts and the Turnpike are required to prepare and implement a quality control (QC) plan for each express lanes facility that addresses the following five (5) critical areas:

- (1) Monitor and confirm toll amounts to support free-flow conditions;
- (2) Implement SELS configuration changes;
- (3) Verify consistency of posted and charged toll amounts;
- (4) Confirm the accuracy of express lanes detectors; and
- (5) Respond to customer inquiries.

For additional information regarding the ***QC Plan***, please refer to ***FELM 10.3***.

### 6.6 TRAFFIC INCIDENT MANAGEMENT AND EXPRESS LANES OPERATING PROCEDURES

Traffic Incident Management (TIM) is a planned and coordinated process to detect, respond to, and remove traffic incidents, as well as restore traffic capacity as safely and quickly as possible. As part of TIM, and prior to opening, express lanes operating procedures (ELOPs) are developed and agreed upon by the Turnpike, District, and other entities involved in operating the facility. The ELOPs are reviewed six (6) months after opening, and annually thereafter, to determine if changes are necessary.

Examples of ELOPs include:

- (1) Event blockages in the express lanes and in the general use and/or general toll lanes immediately following an express lanes egress,
- (2) ITS device, equipment, or communication failures,
- (3) Express lanes Road Rangers dispatch and coordination,
- (4) Enforcement and emergency response, and
- (5) Incident Management.

TIM ELOPs for emergency response and incident management clearance are influenced by separation type and shoulder width. Emergency response and incident management

personnel may use intermittent gate access and the paved shoulder as a pull off area on barrier separated facilities. Barrier separated facilities may also use temporary gate access for maintenance activities and incident closures in the express lanes.

Facilities that are buffer separated with express lane markers might be constrained, with little or no paved shoulder for emergency refuge areas. Dedicated enforcement areas should be considered for these situations. Access to the express lanes by emergency response and incident management personnel is achieved by removing the express lane markers.

District coordination with FHP for enforcement activities is necessary. Hireback contracts may be used by the District to procure FHP enforcement. Activities requiring enforcement may include:

- (1) Illegal lane changes (crossing over the express lane markers to enter or exit the express lanes also known as lane diving),
- (2) Entering express lanes that are closed,
- (3) Speeding, and
- (4) Vehicles with three (3) or more axles using the express lanes.

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## Chapter 7

# EXPRESS LANES MAINTENANCE

### 7.1 GENERAL

Express lanes maintenance is performed for the tolling system, the intelligent transportation systems (ITS) equipment, and the portion of the roadway that is operating as express lanes. Maintenance responsibilities are established through the District and Turnpike Express Lanes Responsibility Matrix (Responsibility Matrix) as identified in **FELM 1.5.1**, and included in **Appendix 1(C)**. To the greatest extent possible, express lanes closures, due to preventive or responsive maintenance activities, are only allowed during non-peak, low traffic periods. In order to minimize express lanes closures, every effort is made to coordinate scheduled maintenance activities and repairs, so multiple activities take place concurrently.

### 7.2 TYPES OF MAINTENANCE

In general, there are two (2) types of maintenance activities on express lanes:

- (1) *Preventive Maintenance*  
Consists of routine, scheduled maintenance with the intent of preventing or minimizing a future equipment failure.
- (2) *Responsive Maintenance*  
Occurs in response to equipment failure or an incident. This type of maintenance cannot be scheduled in advance and typically must be attended to quickly, in order to address the failure and return the system to full functionality.

### 7.3 TOLLING SYSTEM AND INFRASTRUCTURE

The Turnpike and the District Office(s) share the responsibility of maintaining the express lanes tolling system and infrastructure. In general, the Turnpike is responsible for maintaining the tolling system and the District Office is responsible for maintaining the infrastructure items that support the tolling system. The District Office is also responsible for funding the maintenance of the tolling system and infrastructure. Below is a description of the tolling system and infrastructure equipment, and a summary of tolling system maintenance parameters.

#### 7.3.1 Tolling System and Infrastructure Equipment

The Turnpike is responsible for maintenance of the physical toll equipment building and for the tolling system. In some cases, ITS infrastructure components are shared with the District and/or co-located within the toll equipment building. The District(s) is/are responsible for maintenance of the supporting infrastructure. The responsibilities are included in the Responsibility Matrix.

### 7.3.2 Tolling System Maintenance Parameters

The ability to maintain and repair the tolling system equipment directly affects the ability of the facility to manage demand. Maintenance and repair issues are required to be promptly addressed. Proper coordination between the Turnpike and the District Office for both preventive and responsive maintenance is required to minimize impacts to express lanes operations.

Maintenance of the tolling system equipment mounted on the gantry may require a full or partial closure of the express lanes during the maintenance activity. To the greatest extent possible, express lanes closures, due to preventive or responsive maintenance activities, are only allowed during non-peak, low traffic periods. If an accessible gantry is utilized, maintenance is performed from the walkway of the accessible gantry above live traffic.

## 7.4 INTELLIGENT TRANSPORTATION SYSTEMS

Intelligent transportation systems (ITS) maintenance is important to express lanes system operations because an interruption of ITS services can result in operational failures. Without network communications connectivity, toll transactions cannot be transmitted from the equipment building to the Turnpike's Back Office for final processing. Malfunctioning toll amount signs inhibit the ability to charge tolls, and malfunctioning detectors affect the ability to assess traffic conditions and accurately calculate the appropriate toll amount.

The Responsibility Matrix, identified in **FELM 1.5.1** and included in **Appendix 1 (C)**, contains a section for identifying ITS maintenance responsibilities between the District and the Turnpike that support effective express lanes operations. Maintenance work on express lanes ITS equipment is done in accordance with the maintaining District's Traffic Management Center (TMC) Standard Operating Guidelines, as well as with the manufacturer's recommendations and industry best practices.

Maintenance of the ITS equipment may require a full or partial closure of the express lanes during the maintenance activity. To the greatest extent possible, express lanes closures, due to preventive or responsive maintenance activities on ITS equipment, are only allowed during non-peak, low traffic periods.

### 7.4.1 ITS Equipment

ITS maintenance along the express lanes facility includes the following:

- (1) Dynamic Message Signs (DMS)
- (2) Cameras
- (3) Vehicle Detectors
- (4) Communications Equipment and Hubs
- (5) Traffic Management Center (TMC) Equipment
- (6) Software: SunGuide® software and the Statewide Express Lanes Software (SELS) and Hardware
- (7) Access Gates (if applicable)
- (8) ITS Cabinets
- (9) Power Subsystem & Generator Backup

### 7.4.2 Preventive Maintenance

Preventive maintenance reduces equipment failures and extends the life of the ITS system. It includes daily, weekly, monthly, or semi-annual inspections of the systems, and detailed procedures for field checks of all the ITS components. Maintenance contracts are reviewed and updated, as necessary, to accommodate the maintenance needs of the express lanes ITS equipment. Maintenance intervals may need to be adjusted based on location, equipment type, and the criticality of the device to express lanes operations.

For each express lanes facility, preventive ITS maintenance is conducted for the following equipment:

- (1) *Dynamic Message Signs (DMS)*: Maintenance of displays, battery backup, AC power, trimming of any trees obstructing views, and checking of all connections.
- (2) *Cameras*: Lens and dome cleaning, pan/tilt/zoom (PTZ) assembly maintenance, communications checks, power checks, clearance of any trees obstructing views, and camera alignment corrections for maximum visibility. Districts may consider enhanced maintenance tasks for dedicated verification cameras.
- (3) *Vehicle Detectors*: Calibration, communications checks, and power checks.
- (4) *Communications Equipment*: Checking and repair of the fiber communications system between traffic management centers (TMCs), and from the TMC(s) to the field.
- (5) *Traffic Management Center Equipment*: Maintenance of all equipment within the TMC, including the video wall, backup power, and other ancillary hardware. Districts are also responsible for the recurring facility costs and general building maintenance.

- (6) *Software and Hardware:* Updates and patches to the SunGuide® software and SELS, maintenance of the hardware for database and system management, hardware additions for any new or expanded software patches or capabilities.
- (7) *Access Gates (if applicable):* Power system, communication system, access control unit, and mechanical system maintenance.
- (8) *ITS Cabinets:* Power system, backup power system, communication system, equipment, and air conditioning unit maintenance, cabinet security checks, and vandalism protection or abatement.
- (9) *Power Subsystem and Generator Backup:* Maintenance of oil, gas filters, regular run cycles, automatic transfer switch (ATS) testing, supervisory control and data acquisition (SCADA) alarm validation, disconnect, switch, fuses, etc.

#### **7.4.3 Responsive Maintenance**

Responsive maintenance is necessary when problems arise with any portion of the ITS system. A problem is defined as a failed component that needs repair. The priority of the maintenance response is dependent on the severity of the component failure, its effect on the ability to generate or validate dynamic toll amounts, and any resultant effects on the ability to manage traffic demand. Typical causes of component malfunctions requiring immediate attention include, but are not limited to, life expectancy failures, vehicle crashes, theft, vandalism, weather, and unknown component failures.

Each District evaluates existing protocols for responding to critical and non-critical failures and adjusts them, as necessary, for the express lanes ITS infrastructure. Critical failures include problems that affect the demand management capabilities of the express lanes, such as toll collection and calculation. Priority should be given to addressing these critical failures through expedited response. Non-critical failures include problems that do not immediately affect the demand management of the express lanes.

#### **7.4.4 Contracting Approach for Express Lanes ITS Maintenance**

A performance-based contract style is recommended for maintenance of the express lanes ITS equipment. The performance-based contract requires inspection, management, and performance of maintenance activities for all express lanes ITS components of the facility. It is recommended that the contract duration be a minimum of three (3) years.

The performance-based contract structure defines the availability and reliability of each asset to be maintained, the process for the contractor to report outages, and the regular quality control (QC) of work performed. An automated ticketing/tracking system that is integrated with SunGuide® and/or SELS is recommended for the following reasons:

- (1) To provide a mechanism for identifying device failures,
- (2) To determine assets that may require enhancement or replacement, and
- (3) To promote efficiency within the contract by streamlining the tracking of items (1) and (2) above.



## **7.5 ROADWAY**

Roadway features (pavement, pavement markings, signs, etc.) that are part of express lanes are maintained as part of, and in the same manner as, a limited-access facility. Each Express Lanes Project Responsibility Matrix also defines the roadway maintenance responsibilities. Special consideration is given for the maintenance of express lane markers. If a performance-based contract is being used to maintain the roadway portion, then it is recommended that specific performance criteria be developed for express lane markers and other unique express lanes roadway components.

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## Chapter 8

### PUBLIC OUTREACH

#### 8.1 GENERAL

One of the primary functions of the Turnpike's Express Lanes Planning Department is to support a statewide public outreach effort as part of the development and implementation of express lanes projects. This approach ensures that express lanes messaging is cohesive and consistent among all projects throughout the State. In addition, this is an efficient use of the Florida Department of Transportation's (Department's) resources, and is the most effective way to strategically communicate with the public.

#### 8.2 COORDINATION

The Districts are required to coordinate with the Express Lanes Public Outreach Team throughout project development and implementation. The Districts are encouraged to begin this coordination as early as possible (see **Table 8.1**) to assess and plan for resources needed for public outreach. These resources include budgeting for costs associated with public outreach efforts. Early coordination also provides sufficient time for review of materials to ensure that both the statewide templates provided for messaging and all statewide processes are being utilized. Public Outreach may begin early in the project, but most efforts will take place just prior to the opening of the express lanes and will continue for some time after opening.

**Table 8.1: Public Outreach Coordination for Express Lanes Projects**

<b>Project Development</b> <i>(Planning / PD&amp;E / Design)</i>	<b>Project Implementation</b> <i>(Construction / Opening / Operations)</i>
<ul style="list-style-type: none"><li>• Contact the Express Lanes Public Outreach Program Manager regarding an upcoming Express Lanes Project.</li><li>• Plan for the funding needs for the cost associated with Public Outreach.</li><li>• Visit the Statewide Express Lanes Public Outreach SharePoint site to obtain the tools and templates needed for message consistency and to ensure a cohesive look and feel.</li></ul>	<ul style="list-style-type: none"><li>• Coordinate with the Express Lanes Public Outreach Team for the review of Outreach Materials.</li><li>• Visit the Statewide Express Lanes Public Outreach SharePoint site to obtain the tools and templates needed for message consistency and to ensure a cohesive look and feel.</li></ul>

## 8.2.1 Tools and Templates

The Districts are responsible for disseminating their own public outreach messaging using the tools and templates provided by the Express Lanes Planning Public Outreach Team. The following sections describe these resources.

(1) *SharePoint Site*

To facilitate the development and dissemination of cohesive, consistent public outreach materials, a SharePoint site has been developed for use by District Public Information Officers (PIOs) and Metropolitan Planning Organization (MPO) Liaisons. This site houses all express lanes templates and outreach materials including a general PowerPoint template, a project information website template, regional project fact sheets, project handout template, infographic map template, statewide and regional frequently asked questions (FAQs), and logos. The Districts are required to use the materials made available on this site for their project outreach efforts to ensure statewide messaging consistency. This means that the Districts use the templates as provided to input their specific project information. The templates are not to be altered in any way without prior approval of the Turnpike's Public Outreach Program Manager. Once the District has developed these items for a project, they are subject to the approval process identified below in **FELM 8.2.2**. Express lanes videos are also available for the Districts' use. Access to the site is granted through the Express Lanes Public Outreach Office.

(2) *Website*

A consolidated website for information on express lanes in Florida is located at [www.floridaexpresslanes.com](http://www.floridaexpresslanes.com). All outreach efforts are required to direct the public to this website. This site contains general information about express lanes and their benefits, specific projects, and SunPass®. Individual project websites may continue to be developed by the Districts, but are required to use the template located on the Express Lanes Planning Public Outreach intranet SharePoint site. Project website links are located on [www.floridaexpresslanes.com](http://www.floridaexpresslanes.com) to direct visitors to the project-specific websites to obtain more detailed project information. The purpose of directing the public to [www.floridaexpresslanes.com](http://www.floridaexpresslanes.com) is to maintain message consistency. It is the responsibility of the Districts to update the Turnpike's Public Outreach Program Manager regarding any changes to the project information included on [www.floridaexpresslanes.com](http://www.floridaexpresslanes.com) for their projects.

## 8.2.2 Review and Approval of Materials

Once the Districts have prepared materials using the templates provided on the SharePoint site as described above, they are required to coordinate with the Turnpike Express Lanes Public Outreach Team and Central Office for review and approval of outreach materials. The Districts need to allow sufficient time for the review and approval process in their project schedule. The process for review of materials is as follows:

(1) *Turnpike Review and Coordination*

The first step in the materials review process is for the District to submit a document to the Turnpike for review. The Turnpike has up to five (5) business

days to review the document and provide comments back to the District. The District and the Turnpike will coordinate to develop a final draft document.

(2) *Central Office Review and Approval*

The second step is for the District to submit the final draft document to Central Office for review and approval. Central Office has up to five (5) business days to review the document, and provide comments and/or approval back to the District. When the District has received approval from Central Office, the public outreach material is ready to be disseminated.

### 8.3 BRANDING

The Florida Express Lanes brand is defined by the “Flying e” logo, illustrated in **Figure 8.1**. The logo provides a sense of connectivity among all Florida Express Lanes facilities and is intended to help customers easily identify and use express lanes throughout the state. The “Flying e” is required to be used for all express lanes facility messaging and educational outreach materials.

**Figure 8.1: “Flying e” Logo**



The Primary Mark, which is comprised of the “Flying e” and the words FLORIDA EXPRESS LANES, represents express lanes facilities to broad public audiences. The Primary Mark is a bold visual representation of the Department’s Express Lanes brand, and its effect is strongest when used independently from other visual elements in a layout. It should not be altered in any way or be combined with other logos. The Primary Mark is provided in both horizontal (preferred use) and vertical orientations, as shown in **Figure 8.2**.

**Figure 8.2: Primary Mark**



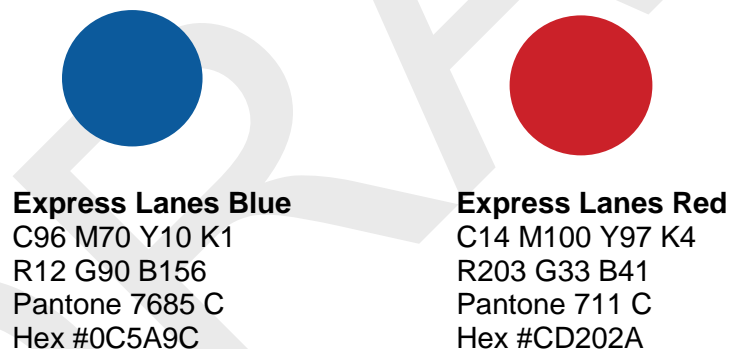
The Facility Mark distinguishes a specific express lanes facility. Facility Mark(s) can be used in place of the Primary Mark when the context of the communication is applicable to one or more express lane facilities. The Facility Mark should not be used in combination with the Primary Mark. As shown in **Figure 8.3**, the express lanes facility name should be placed below the “Flying e,” with the text centered vertically under the “e.”

**Figure 8.3: Facility Mark**



The primary brand colors for Florida Express Lanes are blue and red. The Brand Color Palette is shown in **Figure 8.4**. Following these guidelines will ensure that the brand's colors are used consistently in all communications.

**Figure 8.4: Florida Express Lanes Brand Color Palette**



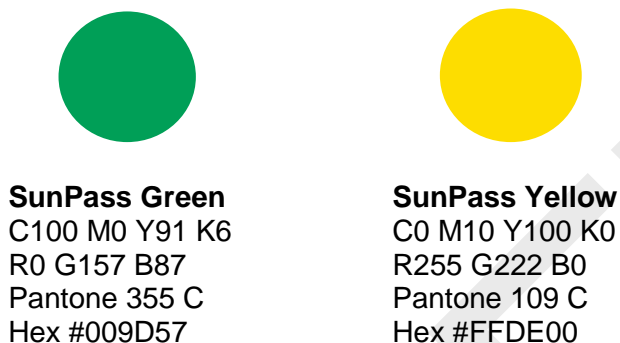
Tolls in the express lanes are collected electronically with an active, properly mounted SunPass® or other interoperable transponder. If space permits, it is important to use the SunPass® logo shown in **Figure 8.5** when producing outreach materials for the Department's express lanes projects.

**Figure 8.5: SunPass® Logo**



The primary brand colors for SunPass® are green and yellow. The Brand Color Palette is shown in **Figure 8.6**. Following these guidelines ensures that the brand's colors are used consistently in all communications.

**Figure 8.6: SunPass® Logo Brand Color Palette**



For more detailed information on the Florida Express Lanes brand, including full color palettes and font usage, please refer to the **Florida Express Lanes Branding & Style Guide**, located on the SharePoint site.

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## Chapter 9

# PROJECT FINANCE FOR NON-TURNPIKE, DEPARTMENT-OWNED EXPRESS LANES

### 9.1 GENERAL

This **Chapter** identifies the role of the Project Finance Office (PFO) in the advancement of express lanes projects, and provides an overview of the various finance options, financial feasibility, and cost breakout for projects. It also establishes policy for use of express lanes revenue in support of regional networks. This **Chapter** applies to express lanes on non-Turnpike facilities.

### 9.2 REGIONAL EXPRESS LANES NETWORK

Currently, Florida has four (4) regional express lanes networks. These include express lanes in operation, under construction, or in planning. The following is a list of the non-Turnpike facilities by regional network, as well as the counties in which they are located:

- (1) *Southeast Florida (Miami and Fort Lauderdale)*  
Encompassing Miami-Dade, Broward, and Palm Beach Counties. It includes 95 Express, 595 Express, 75 Express, and the Palmetto Express
- (2) *Northeast Florida (Jacksonville)*  
Encompassing Clay, St. Johns, and Duval Counties. It includes 295 Express and 95 Express.
- (3) *Central Florida (Orlando)*  
Encompassing Orange, Osceola, Seminole, Volusia, Polk Counties. It includes I-4 Express.
- (4) *West Central Florida (Tampa)*  
Encompassing Pinellas and Hillsborough Counties. It includes Tampa Bay Next - I-4, I-275, and SR 60.

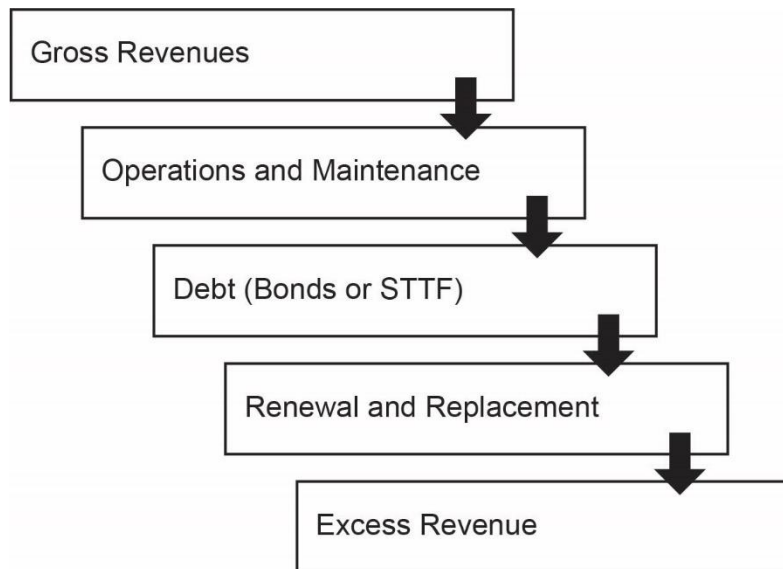
More information about Turnpike express lanes by regional network can be found on [www.floridaexpresslanes.com](http://www.floridaexpresslanes.com).

### 9.3 FLOW OF FUNDS

**Section 338.166, Florida Statutes** dictates how the flow of funds is implemented for a regional express lanes network. Revenues are first used to pay for operations and maintenance (O&M) of the regional network. Then, any debt (i.e., statewide funding or debt service) used to fund the express lanes is repaid. Finally, renewal and replacement costs (e.g., intelligent transportation system (ITS), resurfacing, bridges, etc.) associated with the network are repaid. Any remaining revenue is used by the Department for the construction, maintenance, or improvement of any road on the State Highway System

(SHS) within the county or counties in which the revenue is collected or, with approval from the Secretary, to support express bus service on the express lanes facility. **Figure 9.1** illustrates the Flow of Funds.

**Figure 9.1: Flow of Funds**



Tolls collected on Florida's Turnpike System, including express lanes, are required to be used on the Turnpike System as defined by **Section 338.22, Florida Statutes** (also known as **Florida Turnpike Enterprise Law**).

## 9.4 PROJECT FINANCE OFFICE

The Project Finance Office (PFO) provides strategic and innovative financing solutions, analysis, and reporting. The PFO ensures the advancement of transportation projects, and accountability and consistency with the Florida Department of Transportation's (Department's) policies and procedures.

The PFO must be contacted with any questions related to the finance process, including, but not limited to, the following: express lanes finance plans; funds specific to express lanes and programming of those funds; the Department's Transportation Financing Corporation (TFC); loans from the State Transportation Trust Fund (STTF); repayment of debt; major project financial plans required by the Federal Highway Administration (FHWA); Public-Private Partnerships (P3), State Infrastructure Bank (SIB) Loans, and external financial advisors.

The PFO is also involved in the early stages of project planning for all express lanes projects. The PFO assists in determining the best financing approach for project delivery, whether it is done via a P3, the TFC, a SIB loan, or a STTF loan. All discussions on the express lanes network revenue distribution are coordinated through the PFO.

## 9.5 FINANCING OPTIONS OF EXPRESS LANES NETWORKS

In most cases, when a project includes express lanes, additional funding is required for its implementation. Several options are considered by the PFO, including a loan from the STTF and/or SIB, utilizing the TFC, and developing a public-private partnership (P3). In each approach, there is the potential that any shortfalls in toll revenue to cover costs will be paid out of the STTF, on behalf of the express lanes network, until toll revenue is adequate to support the costs and repay the accumulated debt.

### 9.5.1 Advancement and Loan of Funds from the State Transportation Trust Fund

**Section 339.08(g), Florida Statutes** allows for the lending of funds from the State Transportation Trust Fund (STTF) for the operation, maintenance, and capital costs of a revenue-producing transportation project on the State Highway System (SHS), that is demonstrated to relieve traffic congestion.

When funds are loaned from the STTF to the revenue-producing project, a Memorandum of Understanding (MOU) is required to be executed among the District that is the project owner, the Department's Comptroller, and the Director of the Office of Work Program and Budget. The terms of the MOU require that revenues from the project, after the payment of operations and maintenance (O&M) and any debt service on the express lanes, be returned to the STTF until the accumulated expenditures have been fully reimbursed. The MOU template for these repayment terms can be found in **Appendix 9 (A)**. The expenditures that accumulate as debt to the express lanes network are only for those costs associated with the express lanes.

### 9.5.2 Transportation Finance Corporation

The Florida Legislature enacted **Section 339.0809, Florida Statutes**, which created the Transportation Finance Corporation (TFC) as a nonprofit corporation for the purpose of financing or refinancing transportation projects for the Department. The TFC is governed by a board of directors consisting of the Director of the Office of Policy and Budget within the Executive Office of the Governor, the Director of the Division of Bond Finance, and the Secretary of the Department of Transportation.

The Department may enter into service contracts, for a term of up to 35 years, with the TFC in connection with projects approved in the Department's Five-Year Work Program. The TFC may issue and incur notes, bonds, certificates of indebtedness, and other obligations or evidences of indebtedness. The indebtedness of the TFC does not constitute a debt or obligation of the state or a pledge of the full faith and credit or taxing power of the state. Disbursement of obligations to the TFC are payable solely from amounts available in the STTF, subject to annual appropriation.

An MOU is required among the District receiving the bond financing from the TFC, the Department's Comptroller, and the Director of the Office of Work Program and Budget. The terms of the MOU require that revenues generated from the project, after the payment of O&M and any debt service of the express lanes, be returned to STTF until the

accumulated debt repayment has been fully reimbursed. The express lanes portion of the TFC debt service is treated as debt due to the STTF from the express lanes network. The MOU template for these repayment terms can be found in **Appendix 9 (A)**.

### 9.5.3 Public-Private Partnerships

The Department has utilized two (2) public-private partnership (P3) procurement methods in order to advance projects under **Section 334.30, Florida Statutes**. The first is a short-term advancement of projects included in the Five-Year Work Program known as design-build finance (DBF). The second involves a long-term concession in which the private partner designs, builds, finances, operates, and maintains the project over a long-term period and receives performance-based availability payments over the operations period.

### 9.5.4 State Infrastructure Bank

The State Infrastructure Bank (SIB) is a revolving loan and credit enhancement program that provides loans and other assistance to public and private entities. The SIB can also leverage funds through loans and credit enhancements to improve project feasibility. Loans from the SIB may bear interest at or below market interest rates.

## 9.6 PROJECT FINANCIAL IMPACT ANALYSIS

When the STTF lends funds for a project's construction, the express lanes portion of the costs is reimbursed from toll revenues, as the network flow of funds allows. There is no set repayment schedule; however, it is important to evaluate and plan how the express lanes network will perform financially and determine the potential impacts to STTF for management consideration.

Numerous inputs are required for financial analyses to be performed. The inputs for the analyses include the traffic and revenue (T&R) study completed by the Express Lanes Planning Department, and estimated costs including cost to collect, District O&M, Florida Highway Patrol (FHP) and Road Rangers, intelligent transportation systems (ITS) replacement, resurfacing, and any periodic bridge maintenance.

Once the inputs are known, they will be entered into the Sources and Uses Template used by the PFO, as shown in **Appendix 9 (B)**. This template is designed to show when the debt due to STTF can be paid based on annual projected revenues. Once the original debt is repaid, as well as any debt related to the operation of the express lanes facility, revenues can be used for additional projects within the network. Project phasing is utilized in conjunction with Strategic Intermodal System (SIS) prioritization in order to add priority projects for the region.

The PFO also calculates the net present value (NPV) and the internal rate of return (IRR) of the project. Ultimately, executive management utilizes the financial analyses to assist in making an informed decision on the advancement of an express lanes project, and any financial burden that the project may place on the STTF.

## 9.7 EXPRESS LANES COST BREAKOUT

When the PFO begins the project's financial analysis, the only costs taken into account are those related to the express lanes. In order to do this, some project-specific assumptions are made to break out those costs. The Cost Breakout Guidance can be found in **Appendix 9 (C)**. All cost estimates are provided in present day dollars and are inflated by the PFO. The year in which the estimate is based is clearly indicated on the documents.

### 9.7.1 Design, Construction, and Construction Engineering Inspection

Roll plots are submitted to the Department's Central Office with two (2) colors of shading. One (1) color of shading identifies the elements considered in the express lanes costs, and the other color of shading identifies the elements considered in the general use lanes costs. The long-range estimates (LRE) documentation used to determine the total construction cost of the project is submitted along with a spreadsheet that summarizes the cost from the LRE as express lanes versus general use lanes. The roll plots, the LRE, and the spreadsheet facilitate the project's financial feasibility review. This documentation is used to develop an express lanes percentage of the total project that is also used throughout the project analysis period. For the purposes of the financial feasibility analysis, the percentage is applied to all design and construction costs of the initial project, as well as to preliminary engineering and construction engineering inspection (CEI), including post-design services and contingency costs.

### 9.7.2 District's Operations and Maintenance (O&M) of Express Lanes

All District operating costs for the express lanes are accounted for by prorating based on the number of express lanes to the overall number of lanes. An example of the proration is as follows: in a project with two (2) express lanes plus three (3) general use lanes, that equals five (5) total lanes, the proration is  $2/5$ . Therefore,  $2/5$  or forty percent (40%) of the total operations and maintenance (O&M) cost of the project is attributed to the express lanes. For maintenance cost estimates, an average per lane mile cost is used based on the average urban lane cost for maintenance provided by the State Maintenance Engineer.

Toll operating costs are estimated by the PFO using an average cost per transaction provided by the Turnpike. One hundred percent (100%) of these costs are allocated to the express lanes.

### 9.7.3 Periodic Maintenance

For periodic maintenance, refer to the service life and lane mile costs provided in **Appendix 9 (C)**.

## 9.8 EXPRESS LANES SYSTEM FINANCE PLAN – 10-YEAR FORECAST

A finance plan forecasts the net financial impact of the facility and is used in the STTF finance plan and cash forecast. The finance plan includes the revenue forecast, toll operating costs, District operating costs, District maintenance costs, repayment of debt, current projects programmed in the Five-Year Work Program, and future periodic maintenance forecasts (beyond the Five-Year Work Program). Once all debt has been fully repaid, and all future express lanes network needs are met, remaining revenue is used in accordance with **Section 338.166, Florida Statutes** with approval from the Secretary.

The finance plan is updated on an annual basis. Annual updates to the revenue forecasts are developed by the Express Lanes Planning Department in coordination with the District that is the project owner and the PFO. Operations, maintenance, and periodic maintenance programming updates are made in accordance with the Tentative and Adopted Work Program development cycle. For forecasting beyond what is included in the Work Program, PFO uses an inflation factor to forecast O&M and periodic maintenance based on the replacement cycle outlined in **Appendix 9 (C)**.

## Chapter 10

### QUALITY ASSURANCE AND QUALITY CONTROL

#### 10.1 GENERAL

Quality Assurance (QA) and Quality Control (QC) are two (2) processes required by **Sections 20.23(3)(a)** and **334.048(3), Florida Statutes** to ensure that the public receives quality products and services. QA is the planned, coordinated, and continued activities performed to measure processes against predetermined critical requirements. It is the responsibility of, and performed by, the Florida Department of Transportation's (Department's) Central Office. QC is the process performed to ensure conformance with valid requirements. It is the responsibility of, and performed by, the Department's District Offices and the Florida's Turnpike Enterprise (Turnpike).

In general, express lanes project development is required to follow all QA/QC processes as identified in **Florida Statutes** above, and in the following documents: **FDOT Design Manual (FDM)**, **Turnpike Design Handbook (TDH)**, and **Project Management Handbook**.

The QA and QC requirements identified in this **Chapter** pertain specifically to the monitoring of express lanes operations.

#### 10.2 QUALITY ASSURANCE

Quality Assurance (QA) of express lanes operations is focused on the management of congestion during peak periods to maintain free-flow conditions in the express lanes. Per **Section 14-100.003, Florida Administrative Code**, free-flow conditions are defined as maintaining speeds of at least 45 miles per hour in the express lanes.

#### 10.3 QUALITY CONTROL

The statewide performance measure for express lanes operations is to maintain free-flow conditions, as identified in **FELM 10.2** above, ninety percent (90%) of the time during the 24-hour period. In addition, the Districts and the Turnpike are required to report on the performance of each facility for AM and PM peak periods by direction.

The District Traffic Operations Engineer (DTOE) is responsible for the QC of express lanes operations. Each District and the Turnpike with express lanes facilities in operation must have a **Quality Control (QC) Plan for Express Lanes Operations**. This **Plan** is approved by the District Director of Transportation Operations and must be included in the **Standard Operating Procedures/Guidelines** of the District's Traffic Management Center (TMC).

The **QC Plan**, at a minimum, must identify the frequency of review, review procedures, corrective and follow-up actions, and personnel involved. In addition, all QC plans are required to address five (5) critical areas outlined in **FELM 10.3.1** through **10.3.5** below to define the QA and QC processes for monitoring express lanes operations. Each critical area is defined and includes a QC objective that can be measured, either quantitatively or qualitatively. This is followed by a summary of the QA process to be performed by Central Office (CO) Traffic Operations for each critical area. CO Traffic Operations will check that the District is following its quality control plan during the QA review.

### 10.3.1 Monitor and Confirm Toll Amounts to Support Free-Flow Conditions

The Districts and the Turnpike are responsible for conducting routine performance reviews for all express lanes segments and for making any needed adjustments to the Statewide Express Lanes Software (SELS) to ensure that express lanes are maintained in free-flow conditions.

- (1) *Quality Control Objective*  
Monitor toll amounts from SELS to ensure that each express lanes facility operates at free-flow conditions. Any updates to the level of service (LOS) and Delta-Density tables are made in accordance with the review and approval process for SELS toll setting parameters in **FELM 6.4.3**.
- (2) *Quality Assurance*  
Confirm that initial toll setting parameters have been established consistent with **FELM 6.4.3**, and that periodic updates to toll setting parameters are being made, as needed, to meet the Quality Control Objective identified in (1) above.

### 10.3.2 Implement Statewide Express Lanes Software Configuration Changes

Each District and the Turnpike are responsible for implementing project-specific SELS configurations, in accordance with the **Operations Task Manager (OTM) Configuration User Manual**. (This does not include the approval process for the LOS and Delta-Density tables addressed in **FELM 10.3.1** above. However, the District is responsible for implementation and the quality control of these LOS and Delta-Density table configuration changes.)

- (1) *Quality Control Objective*  
Configure SELS to establish the following automated safeguards for the express lanes operator:
  - (a) Dynamic Message Signs (DMS) display for different operating modes (e.g., normal, congested, closed);
  - (b) Time interval used for refreshing the posted toll amount; and
  - (c) Percent of optional signs to be verified.
- (2) *Quality Assurance*  
Confirm all project-specific SELS configurations have been completed.



### 10.3.3 Verify Consistency of Posted and Charged Toll Amounts

The Districts and the Turnpike are responsible for verifying that the toll amount displayed on the Toll Amount Sign (TAS) consistently matches the actual toll amount charged.

- (1) *Quality Control Objective*  
Verify that the toll amounts charged are equal to those displayed on the TAS. As intended by the SELS operating protocols, the toll amounts are required to be consistent with those displayed, at least 99% of the time. If there is a difference, the toll amount charged is required to be the lesser amount.
- (2) *Quality Assurance*  
Review various reports provided by the Districts and the Turnpike, and confirm that toll amounts charged are matching toll amounts displayed as prescribed in (1) above.

### 10.3.4 Confirm the Accuracy of Express Lanes Detectors

The Districts and the Turnpike are responsible for ensuring that the express lanes detectors are accurate.

- (1) *Quality Control Objective*  
Ensure that the data from express lanes detectors is accurate at least 90% of the time.
- (2) *Quality Assurance*  
Confirm that the District and the Turnpike express lanes detectors are providing accurate data as prescribed in (1) above.

### 10.3.5 Respond to Customer Inquiries

The Districts and the Turnpike are responsible for responding to customer inquiries in a timely and acceptable manner. The District or Turnpike operator is responsible for responding to all operational inquiries. The Turnpike is responsible for responding to all toll-related inquiries.

- (1) *Quality Control Objective*  
Ensure all customer inquiries are routed based on subject matter such as operations, transit, or tolls within one (1) business day, acknowledged by the responsible party within the next business day, and responded to within ten (10) business days from the date it was acknowledged by the responsible party.
- (2) *Quality Assurance*  
Confirm that all customer inquiries received by the Districts and the Turnpike are routed appropriately and have been addressed as prescribed in (1) above.

## QUALITY ASSURANCE DOCUMENTATION

The State Managed Lanes Engineer is responsible for preparing an **Annual Quality Assurance Report** that documents the findings and recommendations from the annual QA activities associated with the statewide monitoring of express lanes operations.

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## Chapter 11

### EXPRESS LANES DEVIATIONS

#### 11.1 GENERAL

Individual characteristics of an express lanes project may warrant flexibility in the application of the policies identified in **FELM 1**. This **Chapter** identifies the process for requesting approval for a deviation.

The express lanes policies, requirements, and procedures contained in the **FDOT Express Lanes Manual (FELM)** are in compliance with the **FDOT Design Manual's (FDM's)** design criteria and standards, and with other applicable documents. If it becomes necessary to depart from the Florida Department of Transportation's (Department's) Controlling Design Elements in the **FDM**, a Design Variance or Design Exception per **FDM 122** is required. This requirement is in addition to the **FELM** deviation process. There may be instances when there is a Design Variance or Design Exception required with no **FELM** deviation, and vice versa.

#### 11.2 EXPRESS LANES MANUAL DEVIATION

A **FELM** deviation is defined as any departure from the policies identified in **FELM 1**. Deviation from a policy is required to be requested and justified. If applicable, mitigation is also required. Each deviation is evaluated independently and no blanket approvals are given.

#### 11.3 TIMING OF DEVIATION REQUEST

It is important to identify and request express lanes deviations as early in project development as possible. This is preferably done during the Project Development and Environment (PD&E) phase when ingress/egress locations, toll points, and a signing plan have been developed for the interim and ultimate phases of the express lanes project. It is required that approval for the express lanes deviations be obtained prior to the completion of the sixty percent (60%) Design phase.

#### 11.4 DOCUMENTATION OF DEVIATION REQUEST

All express lanes deviations must be individually identified, located, and justified. Sufficient detail and explanation must be given in order to build a strong case for those reviewing the request. The required supporting documentation includes the following:

- (1) *Cover Letter*
- (2) *Project Information*
  - (a) Project Location Map
  - (b) Project Description

- (3) *Deviation Identification*
  - (a) Express lanes diagram highlighting location of the deviation(s)
  - (b) Description of the express lanes deviation element(s) and the applicable express lanes policy(ies)
  - (c) Detailed explanation of why the policy(ies) cannot be complied with
    - i. Photos illustrating the constraints (if applicable)
  - (d) Details of Proposed Deviation
    - i. Typical Section (if applicable)
    - ii. Description of any other details of proposed deviation
    - iii. Description of temporary and/or permanent conditions, as applicable
- (4) *Mitigation (if applicable)*
  - (a) Description of anticipated impact on traffic operations, adjacent sections, tolling, and signing
  - (b) Description of proposed solution to address (a) above

## 11.5 REVIEW AND DECISION PROCESS

A deviation request is required for any deviation on a Department express lanes project. Each deviation request is submitted electronically and follows the steps below.

- (1) *Deviation Request Submittal*

The Director of Transportation Development or District Traffic Operations Engineer (DTOE) initiates a deviation request by submitting the documentation identified in **FELM 11.4** above, with a copy provided to the District Secretary. The request is submitted to the State Managed Lanes Engineer who reviews it for completeness, and forwards it to the Express Lanes Planning Department at the Turnpike.
- (2) *Technical Review and Preliminary Recommendation*

The Express Lanes Development Administrator circulates the request to the following technical disciplines: State Toll Systems Design Manager, Turnpike Traffic Design Engineer, Turnpike Roadway Design Engineer, Turnpike Traffic Operations Engineer, State Toll Finance Manager, and the Express Lanes Public Outreach Program Manager. The technical disciplines review the request, provide any comments, and make a recommendation(s).
- (3) *Management Review and Recommendation*

The Express Lanes Development Administrator compiles comments from the technical disciplines and forwards the complete request package, including the recommendation(s), to Turnpike Management. Turnpike Management reviews the recommendation(s) and either concurs with or revises the recommendation. The Turnpike Executive Director coordinates the final recommendation with the District Secretary in advance of forwarding it to the State Managed Lanes Engineer.
- (4) *Central Office Final Action*

The State Managed Lanes Engineer submits the deviation request package with final recommendation(s) to the Chief Engineer for final action. The Chief Engineer communicates the final action to the District or Turnpike.

## **APPENDIX 1 (A)**

### **Florida Administrative Code**



# Florida Administrative Code

## **14-100.001 Training and Qualification Standards for Toll Enforcement Officers.**

(1) Application and Scope. The purpose of this rule is to establish minimum training and qualification standards for toll enforcement officers. These standards shall be the minimum requirements necessary for eligibility to be a toll enforcement officer for the Department of Transportation (hereinafter Department). Toll enforcement officers are authorized to issue uniform traffic citations for failure to pay tolls on a toll facility owned or operated by a governmental entity, as defined in *Section 334.03(11), F.S.*, and on a toll facility owned by a public or private entity for which the Department collects tolls pursuant to an agreement between the Department and the private or public entity authorized by *Section 338.161(5), F.S.* This rule should not be construed to preclude a governmental entity operating a toll facility from establishing more stringent requirements for its toll enforcement officers.

(2) Compliance. Compliance with the rule standards shall be the responsibility of the respective governmental entity which owns or operates the toll facility.

(3) Minimum Training. Toll enforcement officers shall successfully complete the following:

(a) A training course with the Department of Highway Safety and Motor Vehicles on the procedures for issuance of uniform traffic citations.

(b) A minimum of 40 hours of technical instruction on how to access, operate, and maintain the violation enforcement system. The components of the training shall include, at a minimum, equipment configuration and operation.

(4) Minimum Qualifications. The following minimum qualifications shall be applicable to toll enforcement officers:

(a) Toll enforcement officers shall, through their education and work experience, demonstrate to the satisfaction of the hiring governmental entity that they possess the following:

1. The ability to collect and evaluate data related to a violation enforcement system; and,
2. The ability to understand and apply applicable agency, evidentiary, and violation enforcement system rules, regulations, policies, and procedures.

(b) Toll enforcement officers shall have visual acuity correctable to 20/20.

(c) Toll enforcement officers shall be subject to a security background check as a condition of employment pursuant to *Section 110.1127, F.S.*

*Rulemaking Authority 316.640(1), 334.044(2), 338.155, 338.161(5) FS. Law Implemented 316.1001, 316.640(1), 338.161(5), 338.2216 FS. History—New 10-21-97, Amended 8-13-00, 1-16-03, 5-3-09, 2-19-14.*

#### **14-100.002 Prosecution of Unpaid Toll Violations.**

(1) Application and Scope. The purpose of this rule is to implement *Section 316.1001, F.S.*, and provide guidance to toll enforcement officers for the issuance of Uniform Traffic Citations (UTC).

(a) It is in the public interest, fair to users who pay posted tolls, and necessary for toll collection and bond accountability, to enforce the payment of tolls and reduce the number of toll violations which occur when prescribed tolls are not paid by users of toll facilities. Failure to pay a prescribed toll is a violation of *Section 316.1001, F.S.* Violators of *Section 316.1001, F.S.*, at Department owned or operated toll facilities are subject to issuance of a UTC by the Department, and those toll facilities owned by a public or private entity for which the Department collects tolls pursuant to an agreement authorized by *Section 338.161(5), F.S.*

(b) For a toll facility not part of the Florida Turnpike System or otherwise owned by the Department and subject to this rule, all applicable toll rates for the use of the toll facility shall be established by the applicable private or public entity owning the toll facility in accordance with the owner's governing laws, charter, ordinances, resolutions, rules and procedures. The private or public entity shall be responsible for establishing such toll rates on its own toll facilities.

(c) After exhausting all internal Department database records, the license plate number of a motor vehicle alleged to have committed a toll violation shall be entered into the Florida Department of Law Enforcement or the Department of Highway Safety and Motor Vehicles or other database to obtain the name and address of the registered owner for use in prosecution of toll violations.

#### **(2) Issuance of a UTC.**

(a) The registered owner of a vehicle, where the vehicle was observed proceeding through a facility at which the driver failed to pay the required toll, shall be subject to issuance of a UTC for a violation of *Section 316.1001, F.S.* Mailing the citation to the registered owner's address constitutes notification.

(b) A photographic image of a vehicle using a toll facility in violation of *Section 316.1001, F.S.*, captured by the Violation Enforcement System (VES) camera at the toll lane, shall be grounds for issuance of a UTC to the registered owner of the motor vehicle alleged to be involved in the violation.

(c) Florida Turnpike Unpaid Toll Notice Receipt – Driver, SP050-A-006A, Rev. 07/05, and Florida Turnpike Unpaid Toll Notice Receipt – Department, SP050-A-006B, Rev. 07/05, signed by the driver, acknowledging and documenting inability to pay a required toll while in the toll lane or using the toll facility, where the driver fails to send the toll amount as prescribed in the receipt within 10 calendar days, shall be grounds for the issuance of a UTC to the driver.

(d) Except as provided in *Section 316.1001(2)(c), F.S.*, the registered owner of the motor vehicle involved in a toll violation is responsible for payment of the amount provided for in *Section 318.18, F.S.*, in addition to any amount that is imposed as a result of a plea, finding of guilt, or other disposition. If the UTC was issued based on an unpaid toll notice receipt signed by the driver, the requirement of the establishment of this fact by the registered owner is inapplicable.



## Florida Administrative Code

(3) Validation of Digital Photographic Evidence. The Department's toll enforcement officer(s), or his or her designee, shall review captured photographic images of vehicle license plates to ensure accuracy and data integrity. The toll enforcement officer(s), or designee, shall also verify that the toll collection system and VES were performing properly, were functional, and were in operation at the time of the alleged toll violation. The toll enforcement officer(s), or designee, shall review the transaction data to ensure that those transactions immediately prior and subsequent to the toll violation transaction were processed correctly. Upon final validation of violation data, the toll enforcement officer(s), or designee, may cause a UTC to be issued. The requirements of this paragraph do not apply to the issuance of a UTC by a toll enforcement officer that is based on an unpaid toll notice receipt signed by the driver and subsequent failure by the driver to properly remit payment. In that instance, a toll enforcement officer shall have knowledge of the procedures and internal controls in place for receiving, processing, and documenting such deferred payments, and shall issue a UTC based upon verification of the failure of the driver to properly remit payment.

(4) Response to a UTC.

(a) The UTC shall inform the registered owner that the vehicle registered in his or her name was observed proceeding through a toll facility at which the driver failed to pay the required toll, and provide the registered owner of the options to pay the fine, as well as instruction on how to contest the UTC.

(b) Upon receipt of a UTC, except as provided in *Section 316.1001(2)(c), F.S.*, the registered owner of the motor vehicle involved in the violation is responsible for payment of the amount provided for in *Section 318.18(7) or 318.14(12), F.S.*, in addition to any amount that is imposed as a result of a plea, finding of guilt, or other disposition.

(c) The requirements of paragraphs (4)(a) and (b), above do not apply where the issuance of the UTC is based on an unpaid toll notice receipt signed by the driver and subsequent failure by the driver to properly remit payment. In that instance, the UTC will inform the driver of that basis for the issuance of the UTC, and upon receipt of the UTC, the driver who signed the unpaid toll notice receipt, and subsequently failed to properly remit payment, is responsible for payment of the amount provided for in *Section 318.18(7) or 318.14(12), F.S.*, in addition to any amount that is imposed as a result of a plea, finding of guilt, or other disposition.

(5) Forms. The following forms are incorporated by reference and made a part of this rule:

Form Number	Date	Title
SP050-A-002	07/05	Uniform Traffic Citation
SP050-A-006A	07/05	Florida Turnpike Unpaid Toll Notice Receipt – Driver
SP050-A-006B	07/05	Florida Turnpike Unpaid Toll Notice Receipt – Department

Copies of these forms may be obtained from the Florida Department of Transportation, Toll Violation Enforcement, Post Office Box 880069, Boca Raton, Florida 33488-0069.

*Rulemaking Authority 316.1001, 334.044(2), 338.155(1) FS. Law Implemented 316.1001, 334.044(28), 338.155, 338.165, 338.2216338.231 FS. History—New 8-13-00, Amended 8-6-02, 4-16-06, 2-19-14.*

#### **14-100.003 Express Lane Tolling.**

(1) Purpose. The intent of this rule is to establish criteria for express lane tolling by the Florida Department of Transportation.

(2) Definitions. Unless defined below, words, phrases, or terms contained herein shall have the definitions set forth in *Chapters 316, 334 and 338, F.S.* As used in this rule the following words, phrases, or terms shall mean:

(a) "Authorized user" means any person operating a two-axle motor vehicle, or a multi-axle vehicle when permitted by regulatory signage, in an express lane with an active SunPass transponder or interoperable transponder-based pre-paid account, having sufficient funds to pay the applicable toll, or operating a motor vehicle which is exempt from payment of the applicable toll pursuant to *Rule 14-100.004 or 14-100.006, F.A.C.* Two-axle motor vehicles that are leased or rented from a company and registered under a prepaid toll account program with the Department are also authorized for use in the express lanes.

(b) "Department" means Florida Department of Transportation.

(c) "Express lane" means a travel lane or lanes delineated or physically separated from a general use lane or general toll lane within a roadway corridor in which tolls are set based on traffic conditions.

(d) "Free-flow" means conditions under which travel is unimpeded and motor vehicles are able to safely operate at speeds of at least 45 miles per hour in the express lanes.

(e) "General toll lane" means a tolled roadway lane within a toll facility that is not an express lane and for which the applicable toll for its use is not established by variable tolling.

(f) "General use lane" means an untolled roadway lane.

(g) "Level of Service" means a quantitative measure used to classify the quality of traffic conditions on the Turnpike System as provided in *Section 338.2216(1)(d), F.S.*

(h) "Multi-axle" means a vehicle with three or more axles.

(i) "Over-the-Road bus" means a bus characterized by an elevated passenger deck located over a baggage compartment and operated by, a for hire company, registered on the US Federal Motor Carrier Safety Administration (USFMCSA) registration system.

(j) "Point of entry or continuation" means either the location at which a vehicle enters an express lane, or the location at which a vehicle continues on an express lane and passes an electronic message sign where toll information is displayed.

(k) "Public transit bus" means a bus regularly scheduled for transport of the general public and owned, operated, rented, contracted, or leased by a governmental entity.

(l) "School bus" means a bus regularly used for the transportation of prekindergarten, disability program, or kindergarten through grade 12 students of the public schools to and from school or to and from school activities and owned, operated, rented, contracted, or leased by any district school board.

(m) "SunPass toll" means the toll amount charged to use Florida Turnpike System general toll lanes with a SunPass transponder or interoperable transponder-based account.

(n) "Toll point" means the physical location at which a SunPass transponder, interoperable transponder, and/or license plate information is read, and a toll is assessed to authorized users or violators operating a vehicle in an express lane or general toll lane.

(o) "Transaction" is when a vehicle passes a toll point and incurs a toll. An electronic record of each transaction contains vehicle and location information necessary for processing of the transaction.

## Florida Administrative Code

(p) “Vanpool” means a van designed to transport seven or more passengers, including the driver, and registered by a public entity that is authorized by a local government or Metropolitan Planning Organization to register vanpools for transport of employees to and from their place of employment.

(q) “Variable tolling” means the setting of tolls in an express lane for authorized users based on the toll criteria set forth in this rule.

(r) “Violator” means a registered owner of a vehicle operated in an express lane without being an authorized user.

(3) Toll Criteria for Variable Tolling:

(a) The variable toll of an express lane will be determined by analysis of traffic data such as traffic volume, operating speeds, level of service, and trend data in the express lane, general use lanes, general toll lanes, or a combination thereof, to promote free-flow traffic conditions.

(b) The minimum toll for authorized users of an express lane that is not on the Turnpike System will be \$0.50.

(c) The toll for authorized users of an express lane on the Turnpike System will be as follows:

1. All authorized users, except for school buses, public transit buses, Over-the-Road buses, or vanpools that register in the manner described in subparagraph (3)(c)2., will pay:

a. The SunPass toll for the adjacent general toll lanes when the express lane is operating at Level of Service A.

b. The SunPass toll for the adjacent general toll lanes plus \$0.25 when the express lane is operating at Level of Service B.

c. A variable toll when the express lane is operating at Level of Service other than Level of Service A or Level of Service B.

2. School buses, public transit buses, Over-the-Road buses or vanpools will pay the SunPass toll for the general toll lane after properly registering with SunPass. This registration process will require:

a. Completion of the Express Lane Bus Application Registration, Form No. ELB 17-001, effective 2/1/17, incorporated herein at <https://www.flrules.org/Gateway/reference.asp?No=Ref-08071>, and available in electronic format at [www.SunPass.com/BusReg](http://www.SunPass.com/BusReg) to include: organization name, contact name, agency phone number, contact phone number, organization address, organization email address, motor vehicle license plate, make of motor vehicle, year of motor vehicle, personal identification number (PIN), transponder mini ID number (if already purchased), and existing SunPass account number, if applicable. Over-the-Road buses also must submit proof of registration with USFMCSA.

b. Submittal of completed application via the SunPass Express Lane Registration webpage at [www.SunPass.com/BusReg](http://www.SunPass.com/BusReg); via email at [ExpressLaneReg@dot.state.fl.us](mailto:ExpressLaneReg@dot.state.fl.us); via fax to (888)265-1725; via telephone at (888)865-5351; or via US mail to FDOT, 7941 Glades Road, Boca Raton, Florida 33434.

c. Upon approval from SunPass and receipt of a SunPass mini transponder from SunPass for each exempt bus or van, the SunPass mini transponder assigned to the account must be properly affixed to the windshield of each corresponding registered bus or van.

d. Renewing registration annually prior to the expiration date. All registration information must be confirmed or updated as a part of the renewal and submitted by one of the means identified in sub-subparagraph (3)(c)2.b.

(d) The maximum toll for authorized users of the express lanes on Interstate 95 between Mile Marker 4 and Mile Marker 12 will not exceed \$1.50 per mile. If those express lanes reach the maximum toll on any 45 days in a six-month period, the maximum toll will increase by \$0.50 per mile effective the first day of the following month. The maximum toll for authorized users of those express lanes will increase by \$0.50 in any subsequent six-month period meeting the same condition.

(4) Authorized users shall pay all express lane toll transactions.

(5) Multi-axle vehicles are not allowed to operate on an express lane unless otherwise indicated by regulatory signage. If the Department allows multi-axle vehicles on an express lane, the multi-axle toll will be equal to the applicable two-axle toll divided by two, multiplied by the number of axles.

(6) Display of Toll:

To the extent feasible, an electronic message sign in advance of each point of entry to an express lane from a general use lane or general toll lane will display the current toll for two-axle motor vehicles from the point of entry to one or more exit locations. The current toll for two-axle motor vehicles also will be displayed for one or more additional exit locations if travel is continued in the express lanes beyond the exit locations displayed on the signage prior to the point of entry or a continuation.

(7) Violators.

(a) Violators shall pay \$25.00 for each day that the violator has an express lane transaction plus:

1. For express lanes not on the Turnpike System, the express lane toll for each express lane transaction, or

2. For express lanes on the Turnpike System, the applicable axle-based toll for the general toll lanes that are adjacent to the express lanes, plus the applicable variable toll of at least \$0.25 for each express lane transaction.

(b) A violator with a SunPass account or interoperable transponder-based pre-paid account, will have their account charged the express lane toll plus \$25.00 for each day that the violator has an express lane transaction. A violator without a SunPass account must pay the total invoice amount, which will include an administrative charge in the amount established by subsection 14-100.005(6), F.A.C., within 20 days from the invoice date. If an invoice is not paid in full within 20 days from the invoice date, a second invoice will be sent. If the total invoice amount is not paid within 20 days after the invoice date on the second invoice, the Department will pursue the amounts owed to collection to include: issuance of a Uniform Traffic Citation for each individual unpaid toll transaction associated with the original invoice, initiation of a motor vehicle license plate or revalidation sticker registration hold or stop process pursuant to *Section 316.1001(4), F.S.*, or referral of the total unpaid amounts owed to a collection agency or attorney for collection. All subsequent invoices will include all unpaid amounts and will be subject to the same enforcement procedures stated above if not paid within 20 days from the invoice date.

*Rulemaking Authority 334.044(2), 338.155(1), 338.166(4) FS. Law Implemented 316.1001, 316.640(1), 318.14(12), 334.044(16), 338.155(1), 338.165, 338.166(4), 338.2216, 338.231 FS. History—New 5-8-08, Amended 2-19-14, 4-10-17, 2-15-18.*

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### **14-100.004 95 Express Toll Exemption Registration in Miami-Dade, Broward and Palm Beach Counties.**

The provisions of this section apply to only express lanes on I-95 in Miami-Dade County, Broward and Palm Beach Counties.

(1) Purpose. To address congestion and to offer travel-choice options to motorists in South Florida, the 95 Express project implements a combination of tolling, technology, travel demand management and transit elements into a single project along the Interstate 95 corridor. Tolls will be collected electronically. Toll exemptions are allowed for certain vehicle types as specified in this section. Both the tolls and toll exemptions are intended to provide incentives for increased vehicle occupancy, shift in travel demand, and overall congestion relief.

(2) South Florida Commuter Services (SFCS) along with SunPass are partnering to administer the fulfillment and registration process pertaining to this portion of 95 Express Project. SFCS is the regional commuter assistance program funded by the Florida Department of Transportation. SunPass is the Florida Department of Transportation's Prepaid Toll Program. This rule sets forth the process to register for exemption from payment of tolls on 95 Express in Miami-Dade, Broward and Palm Beach Counties.

(3) Exemptions. The following qualify for an exemption from payment of tolls on 95 Express in Miami-Dade, Broward and Palm Beach Counties:

(a) Carpools with three or more occupants, traveling to and from work in one motor vehicle, and registered in the manner described in subsection (5), below.

(b) Vanpools meeting the definition in paragraph 14-100.006(2)(d), F.A.C., and registered pursuant to subsection 14-100.006(4), F.A.C.

(c) Inherently Low Emission Vehicles (ILEV) or Hybrid vehicles, as defined in Section 316.0741, F.S., with valid Department of Motor Vehicles decals, and registered in the manner described in subsection (5), below.

(d) School buses meeting the definition in paragraph 14-100.006(2)(c), F.A.C., and registered pursuant to subsection 14-100.006(4), F.A.C.

(e) Public transit buses meeting the definition in paragraph 14-100.006(2)(b), F.A.C., and registered pursuant to subsection 14-100.006(4), F.A.C.

(f) Over-the-Road Buses (OTRB) meeting the definition in paragraph 14-100.006(2)(a), F.A.C., and registered pursuant to subsection 14-100.006(4), F.A.C.

(g) Motorcycles, as defined in Section 316.003, F.S.

(4) Registered carpools shall only be granted free passage if the motor vehicle has the minimum number of occupants specified in paragraph (3)(a), above; otherwise such user shall be required to pay the applicable tolls.

(5) With registration, decals will be provided by SFCS for the following motor vehicles eligible for an exemption from payment of tolls on 95 Express in Miami-Dade, Broward and Palm Beach Counties: 3+ occupant carpools, ILEV, and hybrid vehicles.

(a) 3+ Occupant Carpools:

1. All eligible carpools must register with SFCS pursuant to its requirements.

2. Registration will allow users to receive a "95 Express" decal that must be displayed in the manner required by SFCS.

3. SFCS will provide the "95 Express" registration form. The registration form requests: name, home address, work address, employer, home/work phone numbers, work schedule, driver license number, and state of motor vehicle registration.

4. 3+ Occupant carpool eligibility will be based on matching all of the following criteria:

Criteria	Configuration	Comments
Home Distance	2-mile radius	Participants must live within a two-mile radius.
Work Distance	1-mile radius	Matched participants must work within a one-mile radius to have a positive match.
Start Time/End Times	30 minutes	Participants must have a start/end work time within this timeframe to have a positive match.

Notwithstanding the above criteria, SFCS will allow a carpool whose participants meet at a specified location, parking lot, park-n-ride or transit/multi-modal facility that is located between the origin and work destination of all registered participants in the carpool.

5. If a driver of a motor vehicle with a registered carpool decal receives two or more citations for failure to pay a required 95 Express toll under *Section 316.1001, F.S.*, which results in a withhold of adjudication or an adjudication of guilt, when operating a motor vehicle with less than three occupants, the carpool decal will be revoked. Further, the driver, and the owner of the carpool decal (if different), will not be eligible to apply for a carpool decal for a period of one year from the revocation of the decal.

(b) ILEV and Hybrid Vehicles:

1. ILEV and hybrid vehicle owners in Miami-Dade, Broward, and Palm Beach counties with valid Florida DHSMV decals are eligible to register for toll exemption on 95 Express in these three counties. Eligible ILEV and hybrid vehicle owners who complete registration with SFCS will receive a decal for toll-free use of 95 Express in Miami-Dade, Broward and Palm Beach Counties.

2. ILEV and hybrid vehicle owners will be required to renew their 95 Express registrations annually with SFCS based upon the anniversary date of the initial request.

*Rulemaking Authority 334.044(2), 316.0741 FS. Law Implemented 316.0741, 316.1001, 316.640(1), 334.044(16), 335.02(3), 338.155(1), 338.165(7), 338.231 FS. History—New 5-8-08, Amended 4-10-17, 2-15-18.*

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### **14-100.005 Video Billing.**

(1) Purpose. The purpose of this rule is to establish the process of video billing on the Florida Turnpike System and other Department owned toll facilities and on toll facilities owned by a public or private entity for which the Department collects tolls pursuant to an agreement between the Department and the private or public entity authorized by *Section 338.161(5), F.S.*

(2) Definition. "TOLL-BY-PLATE" means an image-based video billing system using photographic images of a vehicle's license plate to identify the customer responsible for toll payment.

(3) Process. If a vehicle passes through a toll collection facility and the toll payment is not made by either using cash, a SunPass transponder account, or interoperable transponder-based pre-paid account, having sufficient funds to pay the applicable toll, a photographic image of the vehicle's license plate will be captured at the toll lane and the first-listed registered owner of that vehicle, except as provided below, will be considered the TOLL-BY-PLATE customer. The license plate numbers (LPN) are extracted from the image of the vehicle's license plate, and matched to the LPN for an existing TOLL-BY-PLATE account. If no TOLL-BY-PLATE account is found, the registered owner of the vehicle will be identified through a vehicle registration lookup process. The TOLL-BY-PLATE customer will have 10 days after using the toll facility to contact the Department by calling 1(888)TOLL-FLA (1(888)865-5352) or visiting [www.sunpass.com](http://www.sunpass.com) to pay their toll or establish a pre-paid TOLL-BY-PLATE account as described in subsection (4). If the TOLL-BY-PLATE customer does not fully pay their tolls within that 10-day period, an invoice of the accumulated toll amounts and an administrative charge as described in subsection (7), applicable to the first 14 days of transactions, will be mailed to the TOLL-BY-PLATE customer for payment. All subsequent invoices will be governed by subsections (7) and (8). Any registered owner of a motor vehicle may be treated as the TOLL-BY-PLATE customer if for any reason the Department is unable to effectively invoice the first-listed registered owner.

(4) Establishment of accounts. TOLL-BY-PLATE accounts will be established by either the customer or the Department. Customers may establish a TOLL-BY-PLATE account by providing the motor vehicle LPN and specifying a pre-paid or post-paid account.

(a) Pre-Paid TOLL-BY-PLATE Accounts. TOLL-BY-PLATE customers have the option of establishing and maintaining a pre-paid toll account via credit or debit card, cash, check or money order deposits, from which applicable toll amounts will be debited. Pre-paid TOLL-BY-PLATE account customers whose balance is insufficient to cover the monthly accumulated toll amounts are subject to an invoice for the full toll amount and the administrative charge.

(b) Post-Paid TOLL-BY-PLATE Accounts. Customers will receive an invoice for post-payment of toll amounts and applicable administrative charges. Invoice payments by post-paid TOLL-BY-PLATE customers will be applied to the oldest toll transaction first or as specified by the account customer.

(c) If a TOLL-BY-PLATE account has not been established by a customer within the 10-day period after the first toll transaction use, the Department will establish a post-paid account. Identification of the vehicle will be by review of the LPN image taken at the tolling facility, supplemented as necessary by identifying the vehicle's characteristics and subsequent LPN lookup.

(5) TOLL-BY-PLATE Toll Rate. TOLL-BY-PLATE toll customers shall pay the TOLL-BY-PLATE toll rate established in **Rule 14-15.0081, F.A.C.**, for each facility that offers TOLL-BY-PLATE toll collection. For a toll facility not part of the Florida Turnpike System or otherwise owned by the Department and subject to this rule, all applicable toll rates for the use of the toll facility shall be established by the applicable private or public entity owning or operating the toll facility in accordance with the owner's governing laws, charters, ordinances, resolutions, rules, procedures, or other toll rate determination. The private or public entity shall be responsible for establishing toll rates on its own toll facilities.

(6) Administrative Charges. The Department will establish and collect amounts to recover the costs of administering video billing. This amount covers the additional administrative costs of the Department, such as reviewing photographic images of license plates captured at the toll collection facilities, generating and sending invoices, processing payments received, managing accounts, and other related costs. The administrative charge shall be \$2.50 per invoice.

(7) TOLL-BY-PLATE Accounts and Toll Collection. TOLL-BY-PLATE customers with post-paid accounts will be sent an invoice that includes with the administrative charge added to the invoice, in addition to the unpaid toll amounts, as of the invoice date, based on the TOLL-BY-PLATE rate applicable to the tolling location, and any other unpaid amounts. For facilities that do not offer TOLL-BY-PLATE, the administrative charge will be added to each notice of unpaid toll, in addition to the unpaid toll amount based on the cash toll rate applicable to the location, and any other unpaid amounts.

(8) Unpaid Invoice. A TOLL-BY-PLATE customer has 20 days from the invoice date to pay the total toll amount and the administrative charge. If the invoice has not been paid in full within those 20 days, a second invoice with an additional administrative charge will be sent. If the total amount of unpaid tolls and administrative charges is not paid within 20 days after the invoice date on the second invoice, the Department will pursue the amounts owed to collection to include: issuance of a Uniform Traffic Citation for each individual unpaid toll transaction associated with the original invoice, initiation of a motor vehicle license plate or revalidation sticker registration hold or stop process pursuant to *Section 316.1001(4), F.S.*, or referral of the total unpaid amounts owed to a collection agency or attorney for collection. All subsequent invoices will include all unpaid amounts and will be subject to the same enforcement procedures stated above, if not paid within 20 days from the invoice date.

*Rulemaking Authority 334.044(2), 338.155(1) FS. Law Implemented 316.1001, 334.044(16), 338.155, 338.2216, 338.231(3)(b) FS. History—New 6-13-10, Amended 2-19-14, 4-10-17.*



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### **14-100.006 Department Express Lane Toll Exemption Registration.**

(1) Purpose. The intent of this rule is to establish criteria for toll exemptions on express lanes owned by the Florida Department of Transportation, excluding Florida's Turnpike System.

(2) Definitions.

(a) "Over-the-Road bus" means a bus characterized by an elevated passenger deck located over a baggage compartment and operated by a for hire company registered on the US Federal Motor Carrier Safety Administration (USFMCSA) registration system.

(b) "Public transit bus" means a bus regularly scheduled for the transport of the general public and owned, operated, rented, contracted, or leased by a governmental entity.

(c) "School bus" means a bus regularly used for the transport of prekindergarten, disability program, or kindergarten through grade 12 students of the public schools to and from school or to and from school activities and owned, operated, rented, contracted, or leased by any district school board.

(d) "Vanpool" means a van designed to transport seven or more passengers, including the driver, and registered by a public entity that is authorized by a local government or Metropolitan Planning Organization to register vanpools for transport of employees to and from their place of employment.

(3) Exemptions. The following qualify for an exemption from payment of tolls on express lanes owned by the Florida Department of Transportation, excluding Florida's Turnpike System.

(a) Public transit buses registered in the manner described in subsection (4), below;

(b) School buses registered in the manner described in subsection (4), below;

(c) Over-the-Road buses registered in the manner described in subsection (4), below; and,

(d) Vanpools registered in the manner described in subsection (4), below.

(4) Registration. School buses, public transit buses, Over-the-Road buses or vanpools are exempt from paying tolls on express lanes owned by the Florida Department of Transportation, excluding Florida's Turnpike System, after properly registering with SunPass. This registration process will require:

(a) Completion of Express Lane Bus Application Registration, Form No. ELB 17-001, effective 2/1/17, incorporated herein at <https://www.flrules.org/Gateway/reference.asp?No=Ref-08071>, and available in electronic format at [www.SunPass.com/BusReg](http://www.SunPass.com/BusReg) to include: organization name, contact name, agency phone number, contact phone number, organization address, organization email address, motor vehicle license plate, make of motor vehicle, year of motor vehicle, personal identification number (PIN), transponder mini ID number (if already purchased), and existing SunPass account number, if applicable. Over-the-Road buses also must submit proof of registration with USFMCSA.

(b) Submittal of completed application via the SunPass Express Lane Registration webpage at [www.SunPass.com/BusReg](http://www.SunPass.com/BusReg); via email at [ExpressLaneReg@dot.state.fl.us](mailto:ExpressLaneReg@dot.state.fl.us); via fax to (888)265-1725; via telephone at (888)865-5351; or via US mail to FDOT, 7941 Glades Road, Boca Raton, Florida 33434.

(c) Upon approval from SunPass and receipt of a SunPass mini transponder from SunPass for each exempt bus or van, the SunPass mini transponder assigned to the account must be properly affixed to the windshield of each corresponding registered bus or van.

(d) Renewing registration annually prior to the expiration date. All registration information must be confirmed or updated as a part of the renewal and submitted by one of the means identified in paragraph (4)(b).

*Rulemaking Authority 334.044(2), 316.0741 FS. Law Implemented 316.0741, 316.1001, 316.640(1), 334.044(16), 335.02(3), 338.155(1), 338.165(7), 338.231 FS. History—New 4-10-17.*

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## **APPENDIX 1 (B)**

### **Florida Statutes**



## **120.536 Rulemaking Authority; Repeal; Challenge.—**

(1) A grant of rulemaking authority is necessary but not sufficient to allow an agency to adopt a rule; a specific law to be implemented is also required. An agency may adopt only rules that implement or interpret the specific powers and duties granted by the enabling statute. No agency shall have authority to adopt a rule only because it is reasonably related to the purpose of the enabling legislation and is not arbitrary and capricious or is within the agency's class of powers and duties, nor shall an agency have the authority to implement statutory provisions setting forth general legislative intent or policy. Statutory language granting rulemaking authority or generally describing the powers and functions of an agency shall be construed to extend no further than implementing or interpreting the specific powers and duties conferred by the enabling statute.

(2) Unless otherwise expressly provided by law:

(a) The repeal of one or more provisions of law implemented by a rule that on its face implements only the provision or provisions repealed and no other provision of law nullifies the rule. Whenever notice of the nullification of a rule under this subsection is received from the committee or otherwise, the Department of State shall remove the rule from the Florida Administrative Code as of the effective date of the law effecting the nullification and update the historical notes for the code to show the rule repealed by operation of law.

(b) The repeal of one or more provisions of law implemented by a rule that on its face implements the provision or provisions repealed and one or more other provisions of law nullifies the rule or applicable portion of the rule to the extent that it implements the repealed law. The agency having authority to repeal or amend the rule shall, within 180 days after the effective date of the repealing law, publish a notice of rule development identifying all portions of rules affected by the repealing law, and if no notice is timely published the operation of each rule implementing a repealed provision of law shall be suspended until such notice is published.

(c) The repeal of one or more provisions of law that, other than as provided in paragraph (a) or paragraph (b), causes a rule or portion of a rule to be of uncertain enforceability requires the Department of State to treat the rule as provided by *Section 120.555*. A rule shall be considered to be of uncertain enforceability under this paragraph if the division notifies the Department of State that a rule or a portion of the rule has been invalidated in a division proceeding based upon a repeal of law, or the committee gives written notification to the Department of State and the agency having power to amend or repeal the rule that a law has been repealed creating doubt about whether the rule is still in full force and effect.

(3) The Administrative Procedures Committee or any substantially affected person may petition an agency to repeal any rule, or portion thereof, because it exceeds the rulemaking authority permitted by this section. Not later than 30 days after the date of filing the petition if the agency is headed by an individual, or not later than 45 days if the agency is headed by a collegial body, the agency shall initiate rulemaking proceedings to repeal the rule, or portion thereof, or deny the petition, giving a written statement of its reasons for the denial.

(4) Nothing in this section shall be construed to change the legal status of a rule that has otherwise been judicially or administratively determined to be invalid.

History.—s. 9, *ch. 96-159*; s. 3, *ch. 99-379*; s. 15, *ch. 2000-151*; s. 15, *ch. 2005-2*; s. 4, *ch. 2008-104*; s. 1, *ch. 2012-31*.

### **316.0741 High-Occupancy-Vehicle Lanes.—**

(1) As used in this *Section*, the term:

(a) “High-occupancy-vehicle lane” or “HOV lane” means a lane of a public roadway designated for use by vehicles in which there is more than one occupant unless otherwise authorized by federal law.

(b) “Hybrid vehicle” means a motor vehicle:

1. That draws propulsion energy from onboard sources of stored energy which are both an internal combustion or heat engine using combustible fuel and a rechargeable energy-storage system;

2. That, in the case of a passenger automobile or light truck, has received a certificate of conformity under the *Clean Air Act*, 42 U.S.C. ss. 7401 *et seq.*, and meets or exceeds the equivalent qualifying California standards for a low-emission vehicle; and

3. That, in the case of a tri-vehicle, is an inherently low-emission vehicle as provided in *Subsection (4)*.

(2) The number of persons who must be in a vehicle to qualify for legal use of the HOV lane and the hours during which the lane will serve as an HOV lane, if it is not designated as such on a full-time basis, must also be indicated on a traffic control device.

(3) Except as provided in subsection (4), a vehicle may not be driven in an HOV lane if the vehicle is occupied by fewer than the number of occupants indicated by a traffic control device. A driver who violates this section shall be cited for a moving violation, punishable as provided in *Chapter 318*.

(4)(a) Notwithstanding any other provision of this section, an inherently low-emission vehicle (ILEV) that is certified and labeled in accordance with federal regulations may be driven in an HOV lane at any time, regardless of its occupancy. In addition, upon the state’s receipt of written notice from the proper federal regulatory agency authorizing such use, a vehicle defined as a hybrid vehicle under this section may be driven in an HOV lane at any time, regardless of its occupancy.

(b) All eligible hybrid and all eligible other low-emission and energy-efficient vehicles driven in an HOV lane must comply with the minimum fuel economy standards in 23 USC s. 166(f)(3)(B).

(c) Upon issuance of the applicable United States Environmental Protection Agency final rule pursuant to 23 USC s. 166(e), relating to the eligibility of hybrid and other low-emission and energy-efficient vehicles for operation in an HOV lane, regardless of occupancy, the Department of Transportation shall review the rule and recommend to the Legislature any statutory changes necessary for compliance with the federal rule. The Department shall provide its recommendations no later than 30 days following issuance of the final rule.

(5) The Department shall issue a decal and registration certificate, to be renewed annually, reflecting the HOV lane designation on vehicles meeting the criteria in subsection (4) authorizing driving in an HOV lane at any time. The Department may charge a fee for a decal, not to exceed the costs of designing, producing, and distributing each decal, or \$5, whichever is less. The proceeds from sale of the decals shall be deposited in the Highway Safety Operating Trust Fund. The Department may, for reasons of operation and management of HOV facilities, limit or discontinue issuance of decals for the use of HOV facilities by hybrid and low-emission and energy-efficient vehicles, regardless of occupancy, if it has been determined by the Department of Transportation that the facilities are degraded as defined by 23 USC s. 166(d)(2).

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(6) Vehicles having decals by virtue of compliance with the minimum fuel economy standards under 23 USC s. 166(f)(3)(B), and which are registered for use in high-occupancy-vehicle toll lanes or express lanes in accordance with Department of Transportation rule, shall be allowed to use any HOV lanes redesignated as high-occupancy-vehicle toll lanes or express lanes without requiring payment of a toll.

(7) The Department may adopt rules necessary to administer this section.

History.—s. 28, ch. 95-257; s. 64, ch. 96-323; s. 14, ch. 96-350; s. 1, ch. 2003-45; s. 1, ch. 2008-176; s. 28, ch. 2008-227; s. 3, ch. 2010-223.

### **334.044 Powers and Duties of the Department.—The Department shall have the following general powers and duties:**

(1) To assume the responsibility for coordinating the planning of a safe, viable, and balanced state transportation system serving all regions of the state, and to assure the compatibility of all components, including multimodal facilities.

(2) To adopt rules pursuant to Sections 120.536(1) and 120.54 to implement the provisions of law conferring duties upon it.

(3) To adopt an official seal.

(4) To maintain its headquarters in Tallahassee and its district offices and necessary field offices at such places within the state as it may designate, and to purchase, build, or lease suitable buildings for such uses.

(5) To purchase, lease, or otherwise acquire property and materials, including the purchase of promotional items as part of public information and education campaigns for the promotion of scenic highways, traffic and train safety awareness, alternatives to single-occupant vehicle travel, and commercial motor vehicle safety; to purchase, lease, or otherwise acquire equipment and supplies; and to sell, exchange, or otherwise dispose of any property that is no longer needed by the Department.

(6) To acquire, by the exercise of the power of eminent domain as provided by law, all property or property rights, whether public or private, which it may determine are necessary to the performance of its duties and the execution of its powers.

(7) To enter into contracts and agreements.

(8) To sue and be sued as provided by law.

(9) To employ and train staff, and to contract with qualified consultants. For the purposes of *Chapters 471 and 472*, the department shall be considered a firm.

(10)(a) To develop and adopt uniform minimum standards and criteria for the design, construction, maintenance, and operation of public roads pursuant to the provisions of Section 336.045.

(b) The Department shall periodically review its construction, design, and maintenance standards to ensure that such standards are cost-effective and consistent with applicable federal regulations and state law.

(c) The Department is authorized to adopt rules relating to approval of aggregate and other material sources.

(11) To establish a numbering system for public roads and to functionally classify such roads.

(12) To coordinate the planning of the development of public transportation facilities within the state and the provision of related transportation services as authorized by law.

(13) To plan proposed transportation facilities as part of the State Highway System, and to construct, maintain, and operate such facilities.

(14) To establish, control, and prohibit points of ingress to, and egress from, the State Highway System, the Turnpike, and other transportation facilities under the Department's jurisdiction as necessary to ensure the safe, efficient, and effective maintenance and operation of such facilities.

(15) To regulate and prescribe conditions for the transfer of stormwater to the state right-of-way as a result of manmade changes to adjacent properties.

(a) Such regulation shall be through a permitting process designed to ensure the safety and integrity of the Department of Transportation facilities and to prevent an unreasonable burden on lower properties.

(b) The Department is specifically authorized to adopt rules which set forth the purpose; necessary definitions; permit exceptions; permit and assurance requirements; permit application procedures; permit forms; general conditions for a drainage permit; provisions for suspension or revocation of a permit; and provisions for Department recovery of fines, penalties, and costs incurred due to permittee actions. In order to avoid duplication and overlap with other units of government, the department shall accept a surface water management permit issued by a water management district, the Department of Environmental Protection, a surface water management permit issued by a delegated local government, or a permit issued pursuant to an approved Stormwater Management Plan or Master Drainage Plan; provided issuance is based on requirements equal to or more stringent than those of the department. The Department may enter into a permit-delegation agreement with a governmental entity if issuance of a permit is based on requirements that the department finds will ensure the safety and integrity of facilities of the Department of Transportation.

(16)(a) To plan, acquire, lease, construct, maintain, and operate toll facilities; to authorize the issuance and refunding of bonds; and to fix and collect tolls or other charges for travel on any such facilities.

(b) Notwithstanding any other provision of law, the Department may not enter into a lease-purchase agreement with an expressway authority, regional transportation authority, or other entity. This paragraph does not invalidate a lease-purchase agreement authorized under *Chapter 348* or *Chapter 2000-411*, Laws of Florida, existing as of July 1, 2013, and does not limit the department's authority under s. 334.30.

(17) To designate limited access facilities on the State Highway System and turnpike projects; to plan, construct, maintain, and operate service roads in connection with such facilities; and to regulate, reconstruct, or realign any existing public road as a service road.

(18) To establish and maintain bicycle and pedestrian ways.

(19) To encourage and promote the development of multimodal transportation alternatives.

(20) To conduct research studies, and to collect data necessary for the improvement of the state transportation system.

(21) To conduct research and demonstration projects relative to innovative transportation technologies.

(22) To cooperate with and assist local governments in the development of a statewide transportation system and in the development of the individual components of the system.

(23) To cooperate with the transportation department or duly authorized commission or authority of any state in the development and construction of transportation facilities physically connecting facilities of this state with those facilities of any adjoining state.



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(24) To identify, obtain, and administer all federal funds available to the department for all transportation purposes.

(25) To do all things necessary to obtain the full benefits of the *National Highway Safety Act of 1966*, and in so doing, to cooperate with federal and state agencies, public and private agencies, interested organizations, and individuals to effectuate the purposes of that act, and any and all amendments thereto. The Governor shall have the ultimate state responsibility for dealing with the Federal Government in respect to programs and activities initiated pursuant to the *National Highway Safety Act of 1966*, and any amendments thereto.

(26) To provide for the enhancement of environmental benefits, including air and water quality; to prevent roadside erosion; to conserve the natural roadside growth and scenery; and to provide for the implementation and maintenance of roadside conservation, enhancement, and stabilization programs. At least 1.5 percent of the amount contracted for construction projects shall be allocated by the department on a statewide basis for the purchase of plant materials. Department districts may not expend funds for landscaping in connection with any project that is limited to resurfacing existing lanes unless the expenditure has been approved by the department's secretary or the secretary's designee. To the greatest extent practical, at least 50 percent of the funds allocated under this subsection shall be allocated for large plant materials and the remaining funds for other plant materials. Except as prohibited by applicable federal law or regulation, all plant materials shall be purchased from Florida commercial nursery stock in this state on a uniform competitive bid basis. The Department shall develop grades and standards for landscaping materials purchased through this process. To accomplish these activities, the department may contract with nonprofit organizations having the primary purpose of developing youth employment opportunities.

(27) To conduct studies and provide coordination to assess the needs associated with landside ingress and egress to port facilities, and to coordinate with local governmental entities to ensure that port facility access routes are properly integrated with other transportation facilities.

(28) To require persons to affirm the truth of statements made in any application for a license, permit, or certification issued by the Department or in any contract documents submitted to the Department.

(29) To advance funds for projects in the Department's adopted work program to governmental entities prior to commencement of the project or project phase when the advance has been authorized by the department's comptroller and is made pursuant to a written agreement between the department and a governmental entity.

(30) To take any other action necessary to carry out the powers and duties expressly granted in this code.

(31) To provide oversight of traveler information systems that may include the provision of interactive voice response telephone systems accessible via the 511 number as assigned by the Federal Communications Commission for traveler information services. The Department shall ensure that uniform standards and criteria for the collection and dissemination of traveler information are applied using interactive voice response systems.

(32) To enter into agreement with Space Florida to coordinate and cooperate in the development of spaceport infrastructure and related transportation facilities contained in the Strategic Intermodal System Plan and, where appropriate, encourage the cooperation and integration of airports and spaceports in order to meet transportation-related needs.

(33) To develop, in coordination with its partners and stakeholders, a Freight Mobility and Trade Plan to assist in making freight mobility investments that contribute to the economic growth of the state. Such plan should enhance the integration and connectivity of the transportation system across and between transportation modes throughout the state. The department shall deliver the Freight Mobility and Trade Plan to the Governor, the President of the Senate, and the Speaker of the House of Representatives by July 1, 2013.

(a) The Freight Mobility and Trade Plan shall include, but need not be limited to, proposed policies and investments that promote the following:

1. Increasing the flow of domestic and international trade through the state's seaports and airports, including specific policies and investments that will recapture cargo currently shipped through seaports and airports located outside the state.

2. Increasing the development of intermodal logistic centers in the state, including specific strategies, policies, and investments that capitalize on the empty backhaul trucking and rail market in the state.

3. Increasing the development of manufacturing industries in the state, including specific policies and investments in transportation facilities that will promote the successful development and expansion of manufacturing facilities.

4. Increasing the implementation of compressed natural gas (CNG), liquefied natural gas (LNG), and propane energy policies that reduce transportation costs for businesses and residents located in the state.

(b) Freight issues and needs shall also be given emphasis in all appropriate transportation plans, including the Florida Transportation Plan and the Strategic Intermodal System Plan.

(34) To assume the responsibilities of the United States Department of Transportation with respect to highway projects within the state under the *National Environmental Policy Act of 1969, 42 USC. Sections 4321 et seq.*, and with respect to related responsibilities for environmental review, consultation, or other action required under any federal environmental law pertaining to review or approval of a highway project within the state. The Department may assume responsibilities under 23 USC Section 327 and enter into one or more agreements, including memoranda of understanding, with the United States Secretary of Transportation related to the federal surface transportation project delivery program for the delivery of highway projects, as provided by 23 USC Section 327. The department may adopt rules to implement this subsection and may adopt relevant federal environmental standards as the standards for this state for a program described in this subsection. Sovereign immunity from civil suit in federal court is waived consistent with 23 USC Sections 327 and limited to the compliance, discharge, or enforcement of a responsibility assumed by the Department under this Subsection.

History.—s. 11, ch. 84-309; s. 9, ch. 85-180; s. 26, ch. 86-243; s. 2, ch. 88-224; s. 155, ch. 92-152; s. 56, ch. 93-164; s. 15, ch. 96-423; s. 1, ch. 98-105; ss. 69, 232, 233, ch. 98-200; s. 1, ch. 99-250; s. 6, ch. 2000-266; s. 3, ch. 2002-13; s. 8, ch. 2002-20; s. 39, ch. 2003-286; s. 65, ch. 2006-60; s. 27, ch. 2007-259; s. 1, ch. 2009-89; s. 64, ch. 2010-5; s. 28, ch. 2011-66; s. 23, ch. 2012-174; s. 6, ch. 2014-223; s. 10, ch. 2016-181.

**338.151 Authority of the Department to Establish Tolls on the State Highway System.**—Notwithstanding *Section 338.165(8)*, the Department may establish tolls on new limited access facilities on the State Highway System, lanes added to existing limited access facilities on the State Highway System, new major bridges on the State Highway System over waterways, and replacements for existing major bridges on the State Highway System over waterways to pay, fully or partially, for the cost of such projects. Except for high-occupancy vehicle lanes, express lanes, the Turnpike System, and as otherwise authorized by law, the Department may not establish tolls on lanes of limited access facilities that exist on July 1, 2012, unless tolls were in effect for the lanes prior to that date. The authority provided in this section is in addition to the authority provided under the Florida Turnpike Enterprise Law and *Section 338.166*.

History.—s. 22, ch. 2012-128; s. 41, ch. 2012-174.

**338.155 Payment of Toll on Toll Facilities Required; Exemptions.—**

(1)(a) A person may not use a toll facility without payment of tolls, except:

1. An employee of the agency operating the toll project when using the toll facility on official state business.
2. State military personnel while on official military business.
3. A person with a disability as provided in subsection (3).
4. A person exempt from toll payment by the authorizing resolution for bonds issued to finance the facility.
5. A person exempt on a temporary basis where use of such toll facility is required as a detour route.
6. A law enforcement officer operating an official vehicle while on official law enforcement business.
7. A person operating a fire vehicle while on official business or a rescue vehicle while on official business.
8. A person participating in the funeral procession of a law enforcement officer or firefighter killed in the line of duty.

(b) The secretary or the secretary's designee may suspend the payment of tolls on a toll facility when necessary to assist in emergency evacuation.

(c) The failure to pay a prescribed toll constitutes a noncriminal traffic infraction, punishable as a moving violation as provided in *Section 318.18*. The Department may adopt rules relating to the payment, collection, and enforcement of tolls, as authorized in this *Chapter* and *Chapters 316, 318, 320, and 322*, including, but not limited to, rules for the implementation of video or other image billing and variable pricing.

(d) With respect to toll facilities managed by the department the revenues of which are not pledged to repayment of bonds, the Department may by rule allow the use of such facilities by public transit vehicles or by vehicles participating in a funeral procession for an active-duty military service member without the payment of tolls.

(2) Any person driving an automobile or other vehicle belonging to the Department of Military Affairs used for transporting military personnel, stores, and property, when properly identified, shall, together with any such conveyance and military personnel and property of the state in his or her charge, be allowed to pass free through all tollgates and over all toll bridges and ferries in this state.

(3) A person with a disability who has a valid driver license, who operates a vehicle specially equipped for use by persons with disabilities, and who is certified by a physician licensed under *Chapter 458* or *Chapter 459* or by comparable licensing in another state or by the Adjudication Office of the United States Department of Veterans Affairs or its predecessor as being severely physically disabled and having permanent upper limb mobility or dexterity impairments that substantially impair the person's ability to deposit coins in toll baskets shall be allowed to pass free through all tollgates and over all toll bridges and ferries in this state. Such person shall, upon application, be issued a vehicle window sticker by the Department of Transportation.

(4) A copy of this *Section* shall be posted at each toll bridge and on each ferry.

(5) The Department of Transportation shall provide envelopes for voluntary payments of tolls by those persons exempted from the payment of tolls pursuant to this *Section*. The Department shall accept any voluntary payments made by exempt persons.

(6) Personal identifying information held by the Department of Transportation, a county, a municipality, or an expressway authority for the purpose of paying, prepaying, or collecting tolls and associated administrative charges due for the use of toll facilities is exempt from *Section 119.07(1)* and *Section 24(a)*, Art. I of the State Constitution. This exemption applies to such information held by the Department of Transportation, a county, a municipality, or an expressway authority before, on, or after the effective date of the exemption. This *Subsection* is subject to the Open Government Sunset Review Act in accordance with *Statute 119.15* and shall stand repealed on October 2, 2019, unless reviewed and saved from repeal through reenactment by the Legislature.

History.—s. 1, ch. 59-70; ss. 23, 35, ch. 69-106; s. 243, ch. 71-136; s. 102, ch. 77-104; s. 185, ch. 84-309; s. 3, ch. 85-184; s. 2, ch. 88-252; s. 14, ch. 93-268; s. 47, ch. 94-237; s. 971, ch. 95-148; s. 1, ch. 96-178; s. 55, ch. 97-100; s. 1, ch. 2000-244; s. 15, ch. 2000-266; s. 1, ch. 2001-70; s. 5, ch. 2005-281; s. 24, ch. 2010-225; s. 23, ch. 2012-128; s. 42, ch. 2012-174; s. 1, ch. 2014-217; s. 2, ch. 2018-145.

Note.—Former ss. 340.121, 339.305.

### **338.166 High-Occupancy Toll Lanes or Express Lanes.—**

(1) Under *Section 11, Article VII of the State Constitution*, the Department may request the Division of Bond Finance to issue bonds secured by toll revenues collected on high-occupancy toll lanes or express lanes established on facilities owned by the department.

(2) The Department may continue to collect the toll on the high-occupancy toll lanes or express lanes after the discharge of any bond indebtedness related to such project. All tolls so collected shall first be used to pay the annual cost of the operation, maintenance, and improvement of the high-occupancy toll lanes or express lanes project or associated transportation system.

(3) Any remaining toll revenue from the high-occupancy toll lanes or express lanes shall be used by the department for the construction, maintenance, or improvement of any road on the State Highway System within the county or counties in which the toll revenues were collected or to support express bus service on the facility where the toll revenues were collected.

(4) The Department may implement variable rate tolls on high-occupancy toll lanes or express lanes. The department may require the use of an electronic transponder interoperable with the department's electronic toll collection system for the use of high-occupancy toll lanes or express lanes.

(5) Effective July 1, 2018, if a customer's average travel speed for a trip in an express lane falls below 40 miles per hour, the customer must be charged the minimum express lane toll. A customer's express lane average travel speed is his or her average travel speed from the customer's entry point to the customer's exit point.

(6) Except for high-occupancy toll lanes or express lanes, tolls may not be charged for use of an interstate highway where tolls were not charged as of July 1, 1997.

(7) This *Section* does not apply to the turnpike system as defined under the *Florida Turnpike Enterprise Law*.

History.—s. 14, ch. 2009-85; s. 26, ch. 2012-128; s. 44, ch. 2012-174; s. 1, ch. 2017-182.

### **338.2215 Florida Turnpike Enterprise; Legislative Findings, Policy, Purpose, and Intent.—**

It is the intent of the Legislature that the Turnpike Enterprise be provided additional powers and authority in order to maximize the advantages obtainable through fully leveraging the Florida Turnpike System asset. The additional powers and authority will provide the turnpike enterprise with the autonomy and flexibility to enable it to more easily pursue innovations as well as best practices found in the private sector in management, finance, organization, and operations. The additional powers and authority are intended to improve cost-effectiveness and timeliness of project delivery, increase revenues, expand the turnpike system's capital program capability, and improve the quality of service to its patrons, while continuing to protect the turnpike system's bondholders and further preserve, expand, and improve the Florida Turnpike System.

History.—s. 17, ch. 2002-20.

### **338.2216 Florida Turnpike Enterprise; Powers and Authority.—**

(1)(a) In addition to the powers granted to the department, the Florida Turnpike Enterprise has full authority to exercise all powers granted to it under this chapter. Powers shall include, but are not limited to, the ability to plan, construct, maintain, repair, and operate the Florida Turnpike System.

(b) It is the express intention of the *Florida Turnpike Law* that the Florida Turnpike Enterprise be authorized to plan, develop, own, purchase, lease, or otherwise acquire, demolish, construct, improve, relocate, equip, repair, maintain, operate, and manage the Florida Turnpike System; to expend funds to publicize, advertise, and promote the advantages of using the turnpike system and its facilities; and to cooperate, coordinate, partner, and contract with other entities, public and private, to accomplish these purposes.

(c) The Executive Director of the Turnpike Enterprise shall appoint a staff, which shall be exempt from *Part II of Chapter 110*. Among the staff shall be a Chief Financial Officer, who must be a proven, effective administrator with demonstrated experience in financial management of a large bonded capital program and must hold an active license to practice public accounting in Florida pursuant to *Chapter 473*. The Turnpike Enterprise staff shall also include the Office of Toll Operations.

(d) The Florida Turnpike Enterprise shall pursue and implement new technologies and processes in its operations and collection of tolls and the collection of other amounts associated with road and infrastructure usage. Such technologies and processes must include, without limitation, video billing and variable pricing. The Florida Turnpike Enterprise may require the use of an electronic transponder interoperable with the department's electronic toll collection system for the use of express lanes on the turnpike system. Variable pricing may not be implemented in express lanes when the level of service in the express lane, determined in accordance with the criteria established by the *Transportation Research Board Highway Capacity Manual (5th Edition, HCM 2010)*, as amended from time to time, is equal to Level of Service A. Variable pricing in express lanes when the level of service in the express lane is Level of Service B may only be implemented by charging the general toll lane toll amount plus an amount set by Department rule. Except as otherwise provided in this subsection, pricing in express lanes when the level of service is other than Level of Service A or Level of Service B may vary in the manner established by the Florida Turnpike Enterprise to manage congestion in the express lanes.

(e) Effective July 1, 2018, if a customer's average travel speed for a trip in an express lane falls below 40 miles per hour, the customer must be charged the general toll lane toll amount plus an amount set by department rule. A customer's express lane average travel speed is his or her average travel speed from the customer's entry point to the customer's exit point.

(2) The Department shall have the authority to employ procurement methods available to the Department of Management Services under *Chapters 255 and 287* and under any rule adopted under such chapters solely for the benefit of the turnpike enterprise.

(3)(a) The Turnpike Enterprise shall be a single budget entity and shall develop a budget pursuant to chapter 216. The Turnpike Enterprise's budget shall be submitted to the Legislature along with the Department's budget.

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(b) Notwithstanding the provisions of *Section 216.301* to the contrary and in accordance with *Section 216.351*, the Executive Office of the Governor shall, on July 1 of each year, certify forward all unexpended funds appropriated or provided pursuant to this section for the turnpike enterprise. Of the unexpended funds certified forward, any unencumbered amounts shall be carried forward. Such funds carried forward shall not exceed 5 percent of the original approved operating budget as defined in *Section 216.181(1)* of the Turnpike Enterprise. Funds carried forward pursuant to this section may be used for any lawful purpose, including, but not limited to, promotional and market activities, technology, and training. Any certified forward funds remaining undisbursed on September 30 of each year shall be carried forward.

(4) The powers conferred upon the Turnpike Enterprise under *Sections 338.22-338.241* shall be in addition and supplemental to the existing powers of the Department and the Turnpike Enterprise, and these powers shall not be construed as repealing any provision of any other law, general or local, but shall supersede such other laws that are inconsistent with the exercise of the powers provided under *Section 338.22-338.241* and provide a complete method for the exercise of such powers granted.

History.—s. 18, ch. 2002-20; s. 57, ch. 2002-402; s. 4, ch. 2003-286; s. 6, ch. 2004-6; s. 42, ch. 2006-122; s. 15, ch. 2009-85; s. 2, ch. 2017-182.

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## **APPENDIX 1 (C)**

### **District & Turnpike Express Lanes Responsibility Matrix Template**



Project No.:	Date:
Project Name:	Project Contacts
Project Location:	FDOT District:
	Turnpike:

### District Tolling Procedures (Not For Concession Type Projects)

#### Express Lanes: FDOT District (non-Turnpike)

Express Lanes: FDOT District (non-Turnpike)											LEGEND:
District and Turnpike Express Lanes Responsibility Matrix TEMPLATE											Turnpike (R): Limited Design and Shop Drawing Review by Turnpike
											GTR: The Turnpike's General Tolling Requirements
											(NA): Not Applicable
No.	Element	Description	Ownership	Design Delivery	Submittal Reviews		Construction/ Implementation/ Testing	Maintenance		RCI/BMS/ Asset Mgmt	Notes
					Design Plans	Shop Drawings		Funding District	Perform		
1	Right of Way	Includes all of the right of way associated with the project	District	District	District	NA	NA	District	District	District	
2	Utility Permitting	Includes any necessary permits for utilities associated with the toll site (e.g. leased line or power service permits), markers	NA	District	NA	NA	NA	NA	NA	NA	
3	Toll Building Permitting	Includes the permitting of the Toll Equipment Building	NA	Turnpike	NA	NA	NA	NA	NA	NA	Turnpike is self permitting. Coordination through FTE Building Permit Coordinator.
4	Roadway/ Pavement	Includes resurfacing, patching, pavement marking and other elements within the corridor.	District	District & Turnpike (R)	District & Turnpike (R)	NA	District & Turnpike	District	District	District	Turnpike (R) includes a limited review of the roadway features surrounding the toll point (100' section) including pavement design.
5	Bridges	Includes all bridges and bridge components, inclusion in BMS, inspection and routine and periodic maintenance.	District	District	District	District	District	District	District	District	
6	Signing and Pavement Marking	Includes static signs and pavement markings related to the express lane operations.	District	District & Turnpike (R)	District & Turnpike (R)	District & Turnpike (R)		District	District	District	Turnpike (R) includes a limited review of the toll rate signs, SunPass, and other related toll collection messaging, as well as any pavement marking (including express lanes markers and rpms) for the express lanes.
7	DMS/VMS Signs	Includes DMS/VMS signs related to the express lane operations.	District	District & Turnpike (R)	District & Turnpike (R)	District & Turnpike (R)	District	District	District	District	Turnpike (R) includes a limited review of the toll rate signs, SunPass, and other related toll collection messaging.
8	Sign Structures	Includes the structure required to hold any signs related to the express lane operations.	District	District	District	District	District	District	District	District	
9	District Fiber Optic Cable (FOC)	Includes the communication back-bone for both the ITS system for traffic operations as well as the communication back-bone for tolls data.	District	District & Turnpike (R)	District & Turnpike (R)	District & Turnpike (R)	District & Turnpike	District	District	District	Turnpike (R) includes a limited review to confirm tolls data connectivity approach and architecture from toll sites to the FTE Tolls Data Center (TDC). Optical Time Domain Reflectometer (OTDR) is required as a contract deliverable per FDOT Standard Specifications. Turnpike completes a review of test documents to ensure acceptable dB losses.
10	Turnpike (FOC)	Includes the communication back-bone on the Turnpike for Tolls Data. In most District express lane projects, the District will have project network communication connect to the existing Turnpike fiber optic backbone.	Turnpike	Turnpike	NA	NA	Turnpike	NA	Turnpike	Turnpike	Includes review to confirm tolls data connectivity approach and architecture from toll sites to the FTE Tolls Data Center (TDC). Optical Time Domain Reflectometer (OTDR) is required when new fiber is installed as a contract deliverable per FDOT Standard Specifications. Review test documents to ensure acceptable dB losses. The District is responsible for identifying all fiber/buffer allocations on District fiber in ITS FN.
11	Tolls Lateral and Interconnects (FOC)	Includes the lateral drop between the nearest splice vault and the tolls communications cabinet fiber distribution panel (FDP) inside or between toll equipment buildings.	District	District & Turnpike (R)	District & Turnpike (R)	District & Turnpike (R)	District & Turnpike	District	District	District	Review test documents to ensure acceptable dB losses.
12	Leased Line Telephone Company (Telco)	Includes the site infrastructure (pull boxes and conduit) from the toll equipment building to the nearest splice vault (SV) or point of presence (POP). If no geodiverse fiber is provided, leased lines are required for physical redundancy on express lanes, per GTR 12.5	District & Telco (*)	District, Telco (*) & Turnpike	District, Telco (*) & Turnpike	District, Telco (*) & Turnpike	District, Turnpike, & Telco (*)	District, Turnpike, & Telco (*)	District, Turnpike, & Telco (*)	District & Telco (*)	Turnpike coordinates with the Telco and communicates need based on forecasted traffic volumes and toll system bandwidth requirements. Telco (*) requires 200 days advanced coordination notice prior to turning the site over to the toll equipment contractor. This effort includes circuit ordering and equipment installation by the Telco. To be included only if leased lines are used.
13	District TMC to FTE Tolls Data Center Communications Media (for sending toll amount data)	This item is associated with the protocol for communicating tolls amount data from the District to the Turnpike. It not associated with the physical communications media, but the rather the protocol. The Turnpike owns the ICD. Communications media will be either fiber communications or leased line.	District & Turnpike	District & Turnpike	District & Turnpike	District & Turnpike	NA	District & Turnpike	District & Turnpike	NA	
14	Tolls WAN Monitoring	Includes monitoring of all of the Toll's WAN electronics (within FTE and District network) and leased line connectivity.	Turnpike	Turnpike	NA	NA	NA	Turnpike	Turnpike	Turnpike	Turnpike will monitor WAN switch for connectivity. Wide Area Communication requires a response as soon as practical. Performance metrics should be established for response and repair time.
15	ITS Roadside Equipment	Includes all of the ITS roadside equipment (not including the signs - covered elsewhere in matrix) and system required to identify traffic conditions and monitor vehicle speeds and volumes through the corridor.	District	District	District	District	District	District	District	District	
16	ITS Roadside Communication	Includes the equipment required to connect the roadside equipment with the ITS building/cabinet equipment.	District	District	District	District	District	District	District	District	
17	ITS Traffic Management Software	Includes the software required for traffic management as well as calculate the toll amounts.	District	District	District	District	District	District	District	NA	District will test pricing system. The Turnpike and District will jointly perform End to End testing.
18	ITS Power Service	Includes power services required for equipment use.	District	District	District	District	District	District	District	NA	ITS power shall not be combined or shared with the toll equipment building power service.

Project No.:	Date:
Project Name:	Project Contacts
Project Location:	FDOT District:
	Turnpike:

### District Tolling Procedures (Not For Concession Type Projects)

#### Express Lanes: FDOT District (non-Turnpike)

Express Lanes: FDOT District (non-Turnpike)											LEGEND:
District and Turnpike Express Lanes Responsibility Matrix TEMPLATE											Turnpike (R): Limited Design and Shop Drawing Review by Turnpike
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No.	Element	Description	Ownership	Design Delivery	Submittal Reviews		Construction/ Implementation/ Testing	Maintenance		RCI/BMS/ Asset Mgmt	Notes
					Design Plans	Shop Drawings		Funding District	Perform		
19	ITS Cabinet/ Building	Includes the site infrastructure and building or cabinet required to house the ITS equipment and/or ancillary equipment.	District	District	District & Turnpike (R)	District	District	District	District	District	For Turnpike involvement in submittal review - Should Toll's wide area network (WAN) regeneration be required, then the District ITS cabinet/building shall accommodate the Tolls WAN equipment and electronics.
20	Toll Site	Locating of tolling site and all the civil/site infrastructure in, around, and below the gantry, building, maintenance access area, utility constraints, drainage, etc.	District	District & Turnpike (R)	District & Turnpike (R)	District & Turnpike (R)	District & Turnpike	District	District	District	Turnpike (R) includes the review of site components for GTR conformance.
21	Toll Gantry	Includes the structure and all associated elements included with the structure required for installing, operating, and testing toll equipment. Includes all ancillary items such as grating, fall protection systems, gear operators, electrical equipment, man lifts, access gates, etc. Excludes toll equipment and associated cables provided by the toll equipment contractor.	District	District & Turnpike (R)	District & Turnpike (R)	District & Turnpike (R)	District & Turnpike	District	District	District	Turnpike (R) includes the review of gantry components for GTR conformance. Turnpike to provide guidance on the appropriate use of accessible gantries. District to notify Turnpike when performing Toll Gantry Structure Inspections.
22	Toll Equipment Building	Includes the toll equipment building, and foundation.	District	District & Turnpike	District & Turnpike	District & Turnpike	District & Turnpike	District	Turnpike	District	Turnpike (R) includes the review of toll equipment building components for GTR conformance. The Turnpike will perform maintenance on the Toll Equipment Building. Electrical components within the building will be maintained by Turnpike, but the Power Distribution to the Building will be maintained by the District. Replacement of building from damage beyond repair or end of service life is the District's responsibility. The District does not have to program the maintenance costs for this element, as they are deducted from the toll revenue that the District receives.
23	Toll Equipment Building (Facility Systems)	Includes the systems required for operation of the toll equipment building. These systems include stand-by generator, automatic transfer switch (ATS), diesel fuel tank, HVAC, lighting, electrical power up to the UPS, equipment connections to the SCADA system, and other required systems	District	District & Turnpike	District & Turnpike	District & Turnpike	District & Turnpike	District	Turnpike	District	Turnpike (R) includes the review of the facility systems for GTR conformance. This does not include gantry or rack mounted toll equipment provided and installed by the toll equipment contractor, which is covered under "Toll Equipment" in this matrix. District is responsible for purchasing all fuel for generators. Replacement of all toll equipment building facility systems due to damage beyond repair and end of service life is the Districts' responsibility. The District does not have to program the maintenance costs for this element, as they are deducted from the toll revenue that the District receives. Fire suppression systems in toll equipment buildings shall be installed by others under a separate contract by the Turnpike.
24	Toll Equipment Building (Tolling Systems)	Includes the systems required by the GTR for card access control, communications switch, and CCTV.	District	Turnpike	Turnpike	Turnpike	Turnpike	District	Turnpike	District	This does not include gantry or rack mounted toll equipment provided and installed by the toll equipment contractor, which is covered under "Toll Equipment" in this matrix. Turnpike will coordinate with the District on Toll Systems installation. The District does not have to program the maintenance costs for this element, as they are deducted from the toll revenue that the District receives.
25	Toll Equipment Building (Power Service)	Includes power services required by the toll facility.	District	District & Turnpike	District & Turnpike	District & Turnpike	District & Turnpike	District	District	District	Turnpike (R) includes the review of the facility power systems for GTR conformance. The toll equipment building power service shall be dedicated and not shared. Roadway lighting and ITS power shall not be combined or shared with the toll equipment building power service.
26	Toll Loops	Includes the loop system installed in the tolling area pavement, 50 feet on both sides of the gantry centerline in the express lanes, inside shoulder and adjacent general purpose lane as required by the toll equipment contractor.	District	District & Turnpike	District & Turnpike	NA	District & Turnpike	District	Turnpike	District	The toll equipment contractor shall install these loops in the tolling pavement area in conjunction with the gantry and building mounted toll equipment. The loops are part of the tolling system. The Turnpike will perform an annual inspection of the toll pavement. District will program and pay for maintenance performed by the Turnpike. Turnpike will provide estimates for District programming.
27	Toll Equipment	Includes the gantry/ground/building mounted equipment provided and installed by the toll equipment contractor. Includes the gear boxes on accessible gantries.	District	NA	NA	NA	Turnpike	District	Turnpike	District	Turnpike will test the tolling system. The Turnpike and District will jointly perform End to End testing. Toll equipment installation as-builts are provided by the toll equipment contractor. District will program and pay for maintenance performed by the Turnpike. Turnpike will provide estimates for District programming.
28	FCC License	This includes the coordination and acquisition of the license for the AVI subsystem RF License from the Federal Communications Commission	Turnpike	NA	NA	NA	Turnpike	NA	NA	NA	Time line as required by FCC, requires Northing and Easting, Lat/Long and physical building address for application.

Project No.:	Date:
Project Name:	Project Contacts
Project Location:	FDOT District:
	Turnpike:

### District Tolling Procedures (Not For Concession Type Projects)

#### Express Lanes: FDOT District (non-Turnpike)

District and Turnpike Express Lanes Responsibility Matrix TEMPLATE											LEGEND:
											Turnpike (R): Limited Design and Shop Drawing Review by Turnpike
											GTR: The Turnpike's General Tolling Requirements
											(NA): Not Applicable
No.	Element	Description	Ownership	Design Delivery	Submittal Reviews		Construction/ Implementation/ Testing	Maintenance		RCI/BMS/ Asset Mgmt	Notes
					Design Plans	Shop Drawings		Funding District	Perform		
29	Toll Amount Pricing	District will provide toll amount/rates through coordination with their TMC and provide them to Turnpike Toll's back office.	District	NA	NA	NA	NA	NA	NA	NA	The District is responsible for the dynamic pricing of express lanes based on traffic conditions. (The Turnpike establishes toll rates through the Rule Making Process.)
30	Toll Transaction Processing Software	Includes the software required to manage and operate the toll facility including, transaction creation, trip building, account management, and violations processing.	Turnpike	Turnpike	NA	NA	Turnpike	Turnpike	Turnpike	NA	Turnpike performs these services. The District is charged for the related toll operating costs.
31	Incident Management	Includes funding for Road Ranger Services and other incident management services.	District	NA	NA	NA	District	District	District	NA	
32	Toll Enforcement (Back Office)	Includes programs used to enforce tolls within the system.	Turnpike	NA	NA	NA	Turnpike	Turnpike	Turnpike	NA	Includes Back Office processing for toll violations in accordance with violation business rules for express lanes. Turnpike performs these services. The District is charged for the related toll operating costs.
33	Traffic Enforcement (Roadside)	Coordination of speed enforcement, illegal access/egress, and unauthorized vehicles with FHP or other enforcement agencies.	District	NA	NA	NA	NA	NA	NA	NA	
34	Toll Transaction Processing	Back office processing of express lane toll transactions in accordance with express lane Toll Processing Business Rules. This element is associated with the transaction processing activity.	Turnpike	Turnpike	NA	NA	Turnpike	Turnpike	Turnpike	NA	Turnpike performs these services. The District is charged for the related toll operating costs.
35	Express Lanes (EL) Performance Reporting	Performance and accuracy statistics for speeds, incidents, ITS equipment performance, etc.	District	NA	NA	NA	NA	District	District	NA	
36	Express Lanes (EL) Traffic & Revenue Reporting	Traffic and revenue (T&R) reporting of express lanes traffic and toll transactions.	Turnpike	Turnpike	NA	NA	NA	Turnpike	Turnpike	NA	Turnpike will Report Traffic and Revenue to the District.
37	Project Systems Engineering Management Plan (PSEMP)	A plan for the implementation of the express lanes project using Systems Engineering Process (SEP) principles.	District	District & Turnpike	District & Turnpike	NA	NA	District & Turnpike	District & Turnpike	NA	
38	Project/Corridor Concept of Operations	A plan for how the express lanes will be operated.	District	District & Turnpike	District & Turnpike	NA	NA	District & Turnpike	District & Turnpike	NA	The Concept of Operations should be consistent with the overall regional plan defined in the Regional Concept of Transportation Operations (RCTO) documentation.
39	Public Information (PIO)	Coordination of all project related information on the express lanes project.	District & Turnpike	District & Turnpike	NA	NA	NA	NA	NA	NA	District PIO provides operational information and statistics (average toll, traffic information, incident management). Turnpike addresses express lanes tolling methodology and processes.

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## **APPENDIX 2 (A)**

### **Express Lanes Planning Considerations**





**Prepared by/Contact:** [Click here to enter text.](#)

Financial Project ID: [Click here to enter text.](#)

**Contact Email:** [Click here to enter text.](#)

**Project Name:** [Click here to enter text.](#)

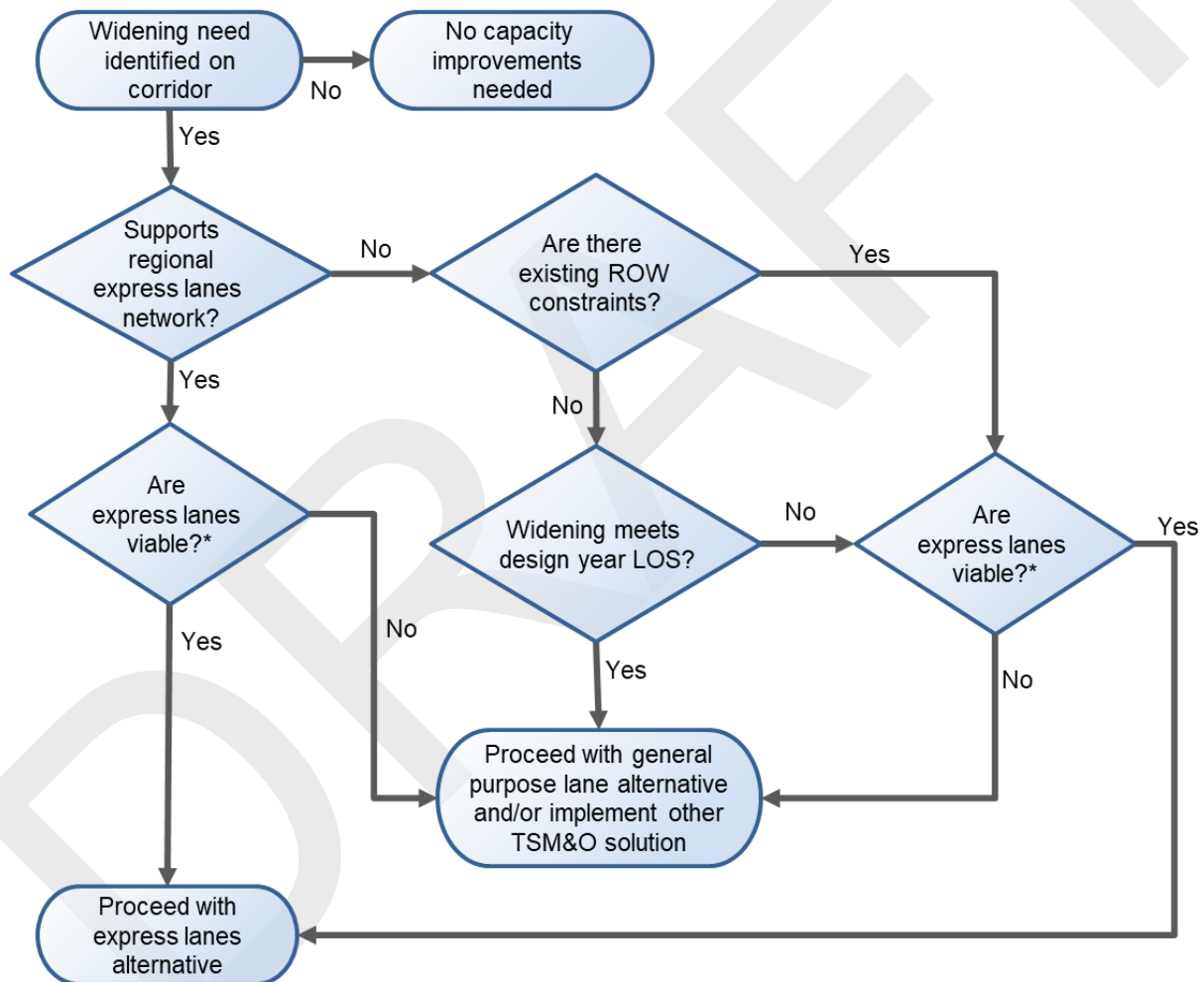
**Contact Phone:** Click here to enter text.

**County:** [Click here to enter text.](#)

**Date Prepared:** [Click here to enter text.](#)

**State Road:** Click here to enter text.

## Express Lanes Screening Decision Tree



\* Refer to Considerations for Express Lanes

Considerations for Express Lanes	
<b>Section A: Planning</b>	
<p>1. Is this the final widening? (i.e. No additional capacity improvements are anticipated to be made after this project.)</p> <p><u>Comments:</u></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
<p>2. Does the project propose to add more than 1 lane in each direction?</p> <p><u>Comments:</u></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
<p>3. Does the project have logical termini that support major origin-destination movements?</p> <p><u>Comments:</u></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
<p>4. Is there potential to extend, or is it an extension of, existing express lanes?</p> <p><u>Comments:</u></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

Considerations for Express Lanes	
<b>Section B: OPS/Geometric</b>	
<i>For the following questions, please answer based on current project understanding.</i>	
1. Can the initial ingress/egress locations geometrically fit and operate acceptably (1,000 ft. per lane change)?  <u>Comments:</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
2. Are you able to bypass at least 2 interchanges in both directions with each express lanes segment?  <u>Comments:</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
3. Does the terminus of the project avoid degrading operations in the general lanes?  <u>Comments:</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
<b>Section C: Public Support</b>	
1. Is there public support for an express lanes project?  <u>Comments:</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

## Considerations for Express Lanes

### Section D: Funding

1. Estimated project cost:

Less Than \$100 Million	\$100 Million - \$500 Million	\$500 Million - Above
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. What is the Financial Item Number(s) of the project (if applicable)?

\_\_\_\_\_

3. What phases are funded by year?

Phase		Year	Amount Funded
2X	Planning/PD&E		
3X	Design		
4X	ROW		
5X	CST		
6X	CEI		

4. Is there a funding gap? If so, provide details.

Comments:

☐ Yes  
☐ No

### Section E: Other

2. Are there any other considerations that would make the express lanes project more or less favorable?

Comments:

Considerations for Express Lanes
<p align="center"><b>District Recommendation and Summary</b></p> <p>Based on the checklist above, provide a recommendation for proceeding with an express lanes alternative, and supporting comments.</p> <p>Proceed with express lanes alternative? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><u>Comments:</u></p>

\_\_\_\_\_  
\_\_\_\_\_  
District Secretary

Date

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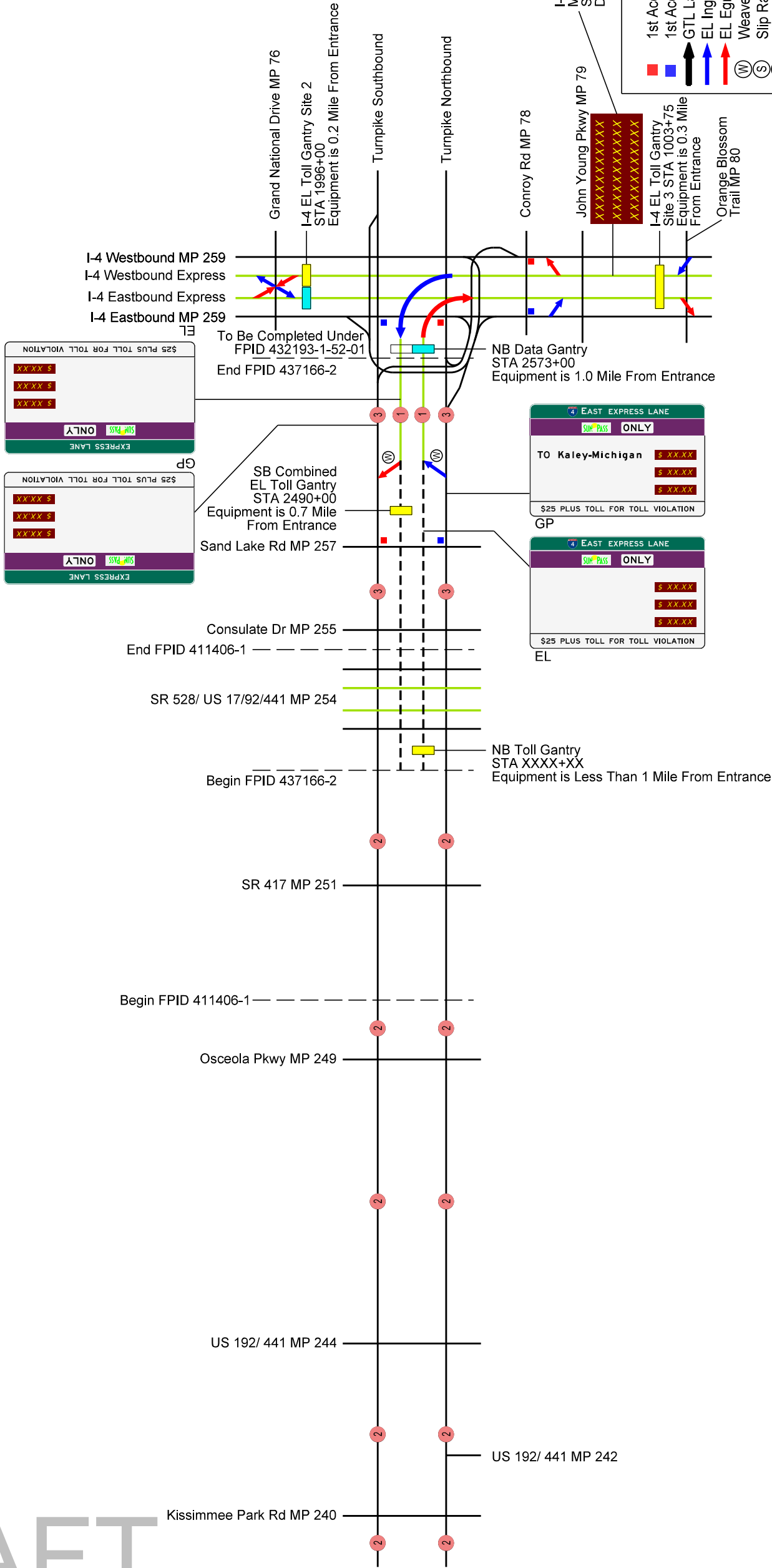
## **APPENDIX 2 (B)**

### **Express Lanes Diagrams with Phases**





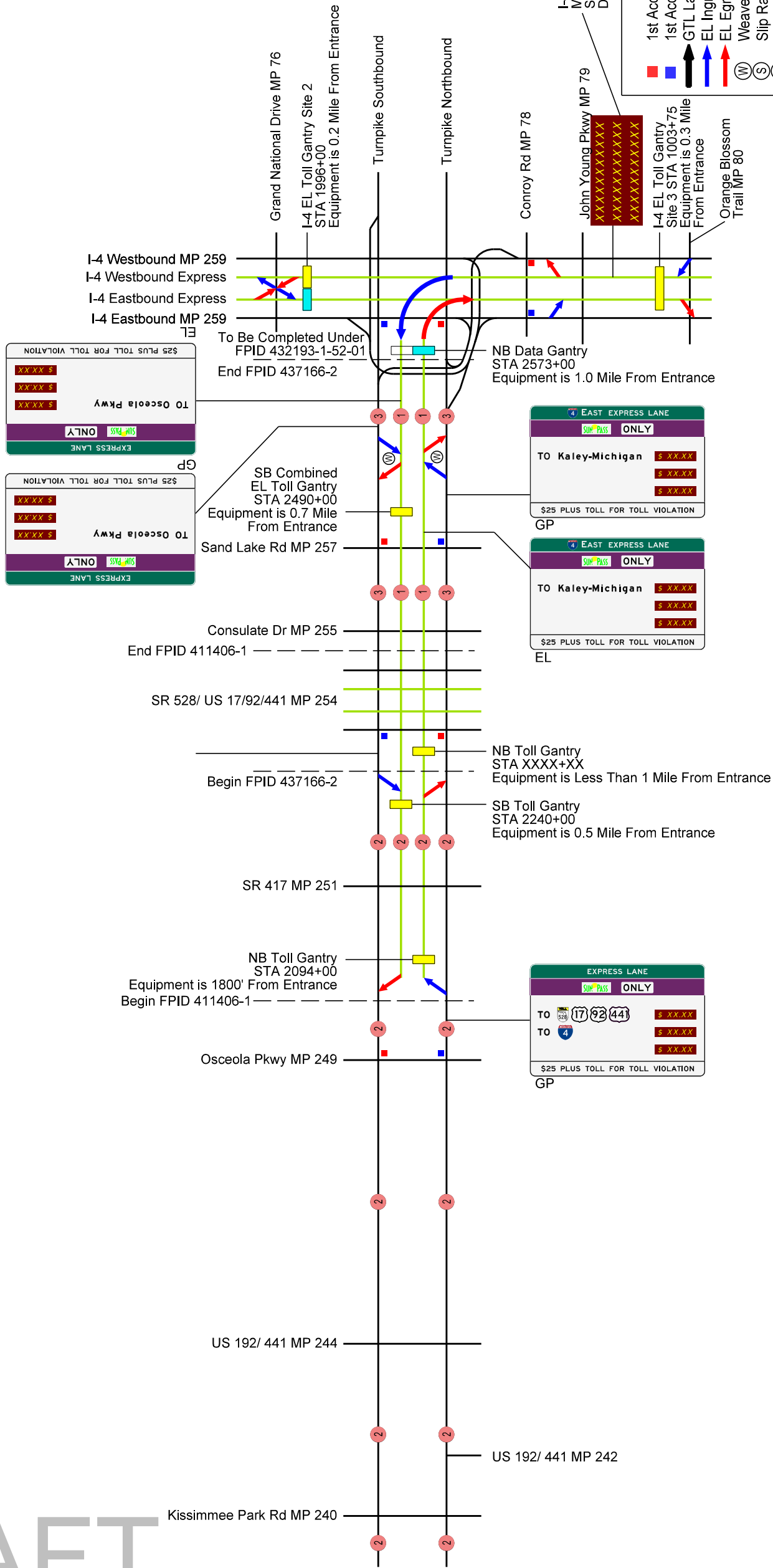
DRAFT



LEGEND

- 1st Accessible Ramp After EL Egress
- 1st Accessible Ramp Before EL Ingress
- GTL Lane Ingress/Egress
- EL Ingress
- EL Egress
- Weave Lane EL Ingress/Egress Layout
- Slip Ramp EL Ingress/Egress Layout
- Weave Zone EL Ingress/Egress Layout
- Number of Through Lanes
- EL Segment
- Constructed EL Segment Not In Use
- Constructed EL Segment In Use As GUL/GTL
- Dynamic Toll Gantry
- Static + Dynamic Toll Gantry
- Static Toll Gantry
- AVI Equipment Point
- Data Gantry
- Gantry With No Equipment
- Mainline GUL / GTL / Secondary Road

DRAFT



LEGEND

1st Accessible Ramp After EL Egress

1st Accessible Ramp Before EL Ingress

GTL Lane Ingress/Egress

EL Ingress

EL Egress

Weave Lane EL Ingress/Egress Layout

Slip Ramp EL Ingress/Egress Layout

Weave Zone EL Ingress/Egress Layout

Number of Through Lanes

EL Segment

Constructed EL Segment Not In Use

Constructed EL Segment In Use As GUL/GTL

Dynamic Toll Gantry

Static + Dynamic Toll Gantry

Static Toll Gantry

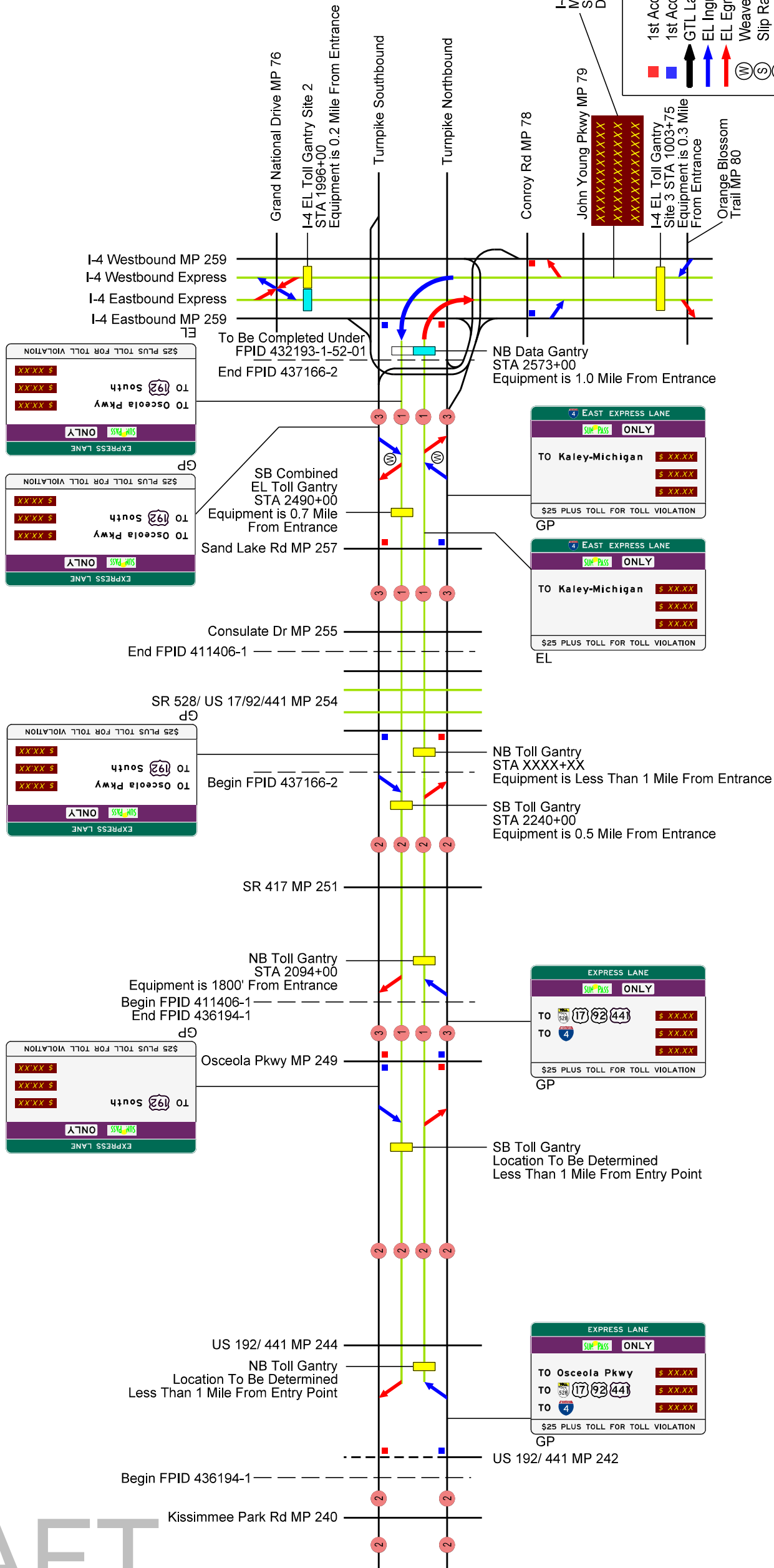
AVI Equipment Point

Data Gantry

Gantry With No Equipment

Mainline GUL / GTL / Secondary Road

DRAFT



LEGEND

1st Accessible Ramp After EL Egress

1st Accessible Ramp Before EL Ingress

GTL Lane Ingress/Egress

EL Ingress

EL Egress

Weave Lane EL Ingress/Egress Layout

Slip Ramp EL Ingress/Egress Layout

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Number of Through Lanes

EL Segment

Constructed EL Segment Not In Use

Constructed EL Segment In Use As GUL/GTL

Dynamic Toll Gantry

Static + Dynamic Toll Gantry

Static Toll Gantry

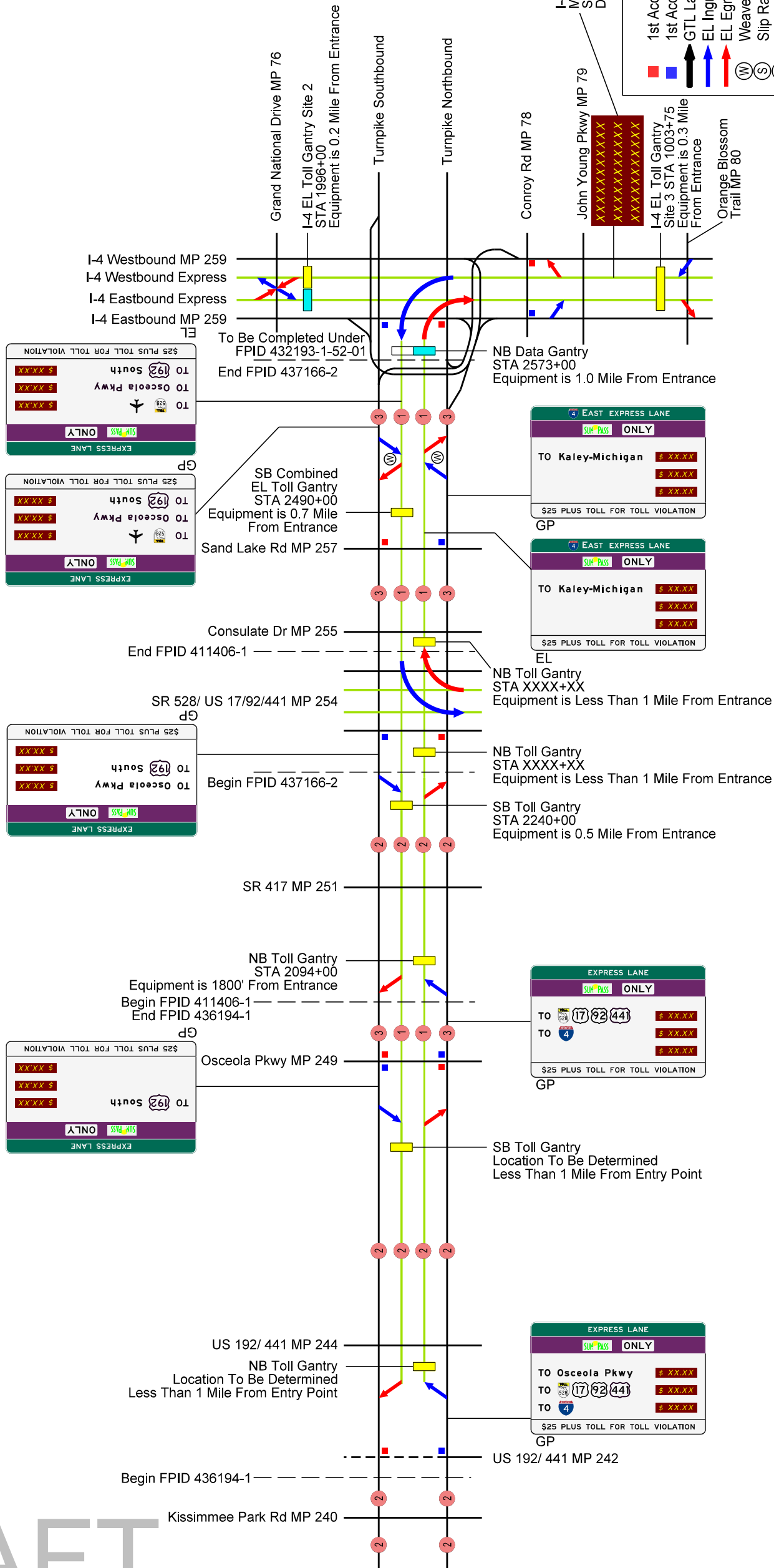
AVI Equipment Point

Data Gantry

Gantry With No Equipment

Mainline GUL / GTL / Secondary Road

DRAFT



LEGEND

1st Accessible Ramp After EL Egress

1st Accessible Ramp Before EL Ingress

GTL Lane Ingress/Egress

EL Ingress

EL Egress

Weave Lane EL Ingress/Egress Layout

Slip Ramp EL Ingress/Egress Layout

Weave Zone EL Ingress/Egress Layout

Number of Through Lanes

EL Segment

Constructed EL Segment Not In Use

Constructed EL Segment In Use As GUL/GTL

Dynamic Toll Gantry

Static + Dynamic Toll Gantry

Static Toll Gantry

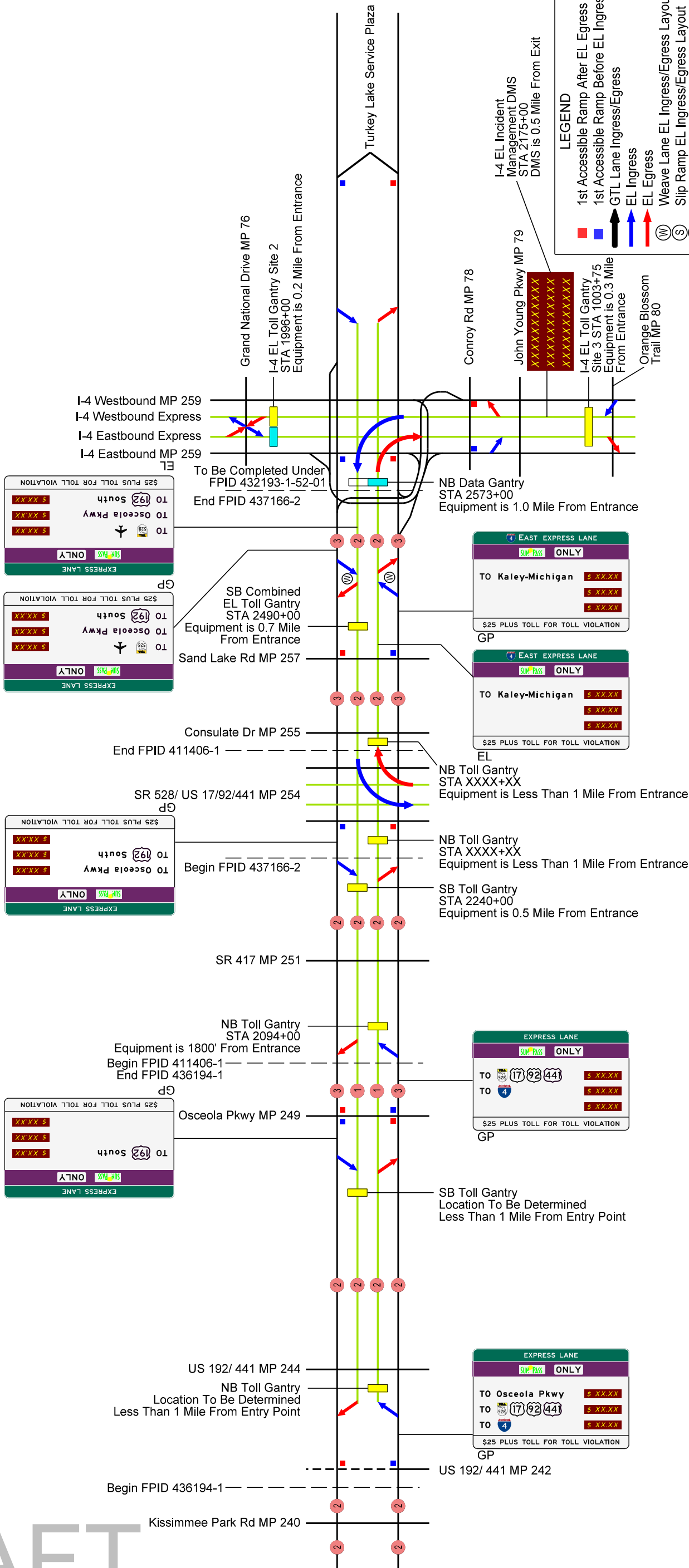
AVI Equipment Point

Data Gantry

Gantry With No Equipment

Mainline GUL / GTL / Secondary Road

DRAFT



LEGEND

1st Accessible Ramp After EL Egress

1st Accessible Ramp Before EL Ingress

GTL Lane Ingress/Egress

EL Ingress

EL Egress

Weave Lane EL Ingress/Egress Layout

Slip Ramp EL Ingress/Egress Layout

Weave Zone EL Ingress/Egress Layout

Number of Through Lanes

EL Segment

Constructed EL Segment Not In Use

Constructed EL Segment In Use As GUL/GTL

Dynamic Toll Gantry

Static + Dynamic Toll Gantry

Static Toll Gantry

AVI Equipment Point

Data Gantry

Gantry With No Equipment

Mainline GUL / GTL / Secondary Road

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## **APPENDIX 2 (C)**

### **Planning Phase Considerations**





# **PLANNING PHASE CONSIDERATIONS**

## **1 REGIONAL LEVEL**

- (1) Where are the corridors?
- (2) What are the corridor limits?
- (3) Where are the direct-connect (express lanes to express lanes, or express lanes to general use or general toll lanes) interchanges located? (within District, District to District, District to another agency)
- (4) What is the anticipated sequencing of corridors based on the latest Work Program?

## **2 CORRIDOR LEVEL**

- (1) What are the major origins and destinations (O-Ds), and are they being served?
- (2) What public, political, or other commitments need to be incorporated?
- (3) Has a preferred corridor alternative been identified from a PD&E study? Does it include ingress/egress points that are representative of the major O-Ds in the corridor?
- (4) Is the express lanes tolling diagram complete for the ultimate configuration?
  - (a) Does the sign destination logic work?
  - (b) Is there enough space for signs?
  - (c) Is there enough distance to merge for ingress and egress into the express lanes?
  - (d) Have the toll points been located and do they meet **General Tolling Requirements (GTR)** criteria?
  - (e) Is there continuity of lanes (number of lanes)?
  - (f) Is the segment definition being met? Are there any exceptions needed?
  - (g) Does the concept align with the logic of the pricing system software as well as the trip building/ rate assignment software?
  - (h) Does the toll plan allow for congestion management to the maximum extent possible?
- (5) Are the interim phases or steps to building out a corridor and connecting corridors shown on a series of express lanes tolling diagrams? (There could be multiple interim concepts depending on possible construction phasing/funding and interim operations.)
- (6) Has a Traffic & Revenue study evaluating the ultimate project and any interim project phasing been performed?
- (7) Does the project create adverse traffic congestion or move congestion to another location of the corridor? If yes, how is it going to be mitigated?
- (8) Do the corridor level concepts match up to support seamless regional operation?

### **3 PROJECT LEVEL**

- (1) Are the advance express lanes signs in the correct project or within the project limits?
- (2) Do the signs fit? Is temporary signing needed to support phasing?
- (3) Is the signing logic correct?
- (4) Are the toll points in the correct location?
- (5) Do the tolling points still meet the GTR criteria?
- (6) What is the phasing of opening the lanes? Has the phasing been coordinated with other internal disciplines (including the Public Information Office (PIO)), and with FDOT Districts, and other agencies?
- (7) When will express lanes markers be installed and where will installation start and end?
- (8) When will the toll points become available for toll equipment?
- (9) Does the schedule include end to end testing?
- (10) What is the construction plan for adding lanes?
- (11) How will traffic pass under the toll gantry during construction?
- (12) When will friction course be put down?
- (13) Will there be interim tolling?
- (14) What is the sequence for uncovering toll rate signs and destinations?
- (15) What is the overall go-live plan? Friction, striping, express lanes markers, signs, charging, etc.

## **APPENDIX 3 (A)**

### **FDOT District Traffic and Revenue Study Project Request Form**





# FDOT District Traffic and Revenue Study Project Request Form

---

**Date:** [Click here to enter a date.](#)

**District:** [Choose an item.](#)

**District Project Manager Contact Information:**

**Facility Name:**

**Location and Limits (include a project location map):**

**Type of Project (Express Lanes, New Tolloed Facility, Other – please specify):**

**Project Description:**

**Has the project been studied previously?:**  
(if yes, identify the study and attach a copy of the final report)

**Other Information:**

**Authorized Signature (District Secretary or Assistant Secretary for Central Office):**

---

**Signature**

---

**Date**

---

**Printed Name**

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## **APPENDIX 9 (A)**

### **Memorandum of Understanding**





## **MEMORANDUM OF UNDERSTANDING**

THIS MEMORANDUM OF UNDERSTANDING, is entered into effect this \_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, between the Florida Department of Transportation, (the “Department”), and District \_\_\_\_ of the Department (the “District”).

### **RECITALS**

A. The Department is authorized to lend or advance State Transportation Trust Fund monies to pay the capital costs of a revenue-producing transportation project on the State Highway System pursuant to s. 339.08(g), Florida Statutes, and s. 339.125, Florida Statutes.

B. The legislative intent expressed in s. 339.125, Florida Statutes, is for the Department to provide for the expeditious repayment of funds advanced from the State Transportation Trust Fund to pay the capital costs of a revenue producing facility.

C. The District has requested a loan from the State Transportation Trust Fund to pay certain capital costs of the revenue producing project known as \_\_\_\_\_ (the “Project”).

D. The Department will lend funds from the State Transportation Trust Fund to pay capital costs of the Project in accordance with the terms of this Memorandum of Understanding.

### **TERMS**

1. The Department will lend funds for the capital costs associated with the construction of the Project (including design and construction engineering and inspection) specific to the facility with the fund code DSB\_. The District shall program the funds in the Work Program.

2. Funds made available from the State Transportation Trust Fund for the purpose of paying the capital costs of the Project will not reduce the funding otherwise allocated to the District in accordance with s. 339.135(4), Florida Statutes.

3. The Department will track the expenditures annually. These expenditures will be reimbursed fully from the proceeds of any bonds issued to finance the capital costs of the Project or, to the extent bond proceeds are not yet available, from the Project revenues after the payment of operations and maintenance costs and any debt service on other debt secured by a pledge of the Project revenues.

4. Reimbursements will be deposited into the State Transportation Trust Fund and allocated in accordance with applicable law.

**STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION**

BY: \_\_\_\_\_  
Name  
Comptroller

BY: \_\_\_\_\_  
Name  
Director, Office of Work Program and Budget

**STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION  
DISTRICT \_\_\_\_**

BY: \_\_\_\_\_  
Name  
District Secretary

## **APPENDIX 9 (B)**

### **Project Financial Feasibility Template**



Project XX Sources and Uses Template														
Year	1	2	3	4	5	6	7	8	9	10	20	30	40	50
Fiscal Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2037	2047	2057	2067
Sources:														
Gross Revenue of Project	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Available Network Revenues	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Sources:	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Uses:														
Toll Operating Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
District Operating Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
District Maintenance Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total O&M:	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Amount Due to STTF/Bond Debt Service Payments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
R&R	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Uses:	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Annual Excess (debt due to STTF):	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cumulative Excess (debt due to STTF):	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Fiscal Year O&M is covered by toll revenues: FY 20XX

Fiscal Year all uses covered by toll revenues: FY 20XX

Fiscal Year STTF/Bond Debt fully reimbursed: FY 20XX

50-Year NPV at 5% discount rate: \$ -

50-Year IRR: 0%

Notes:

R&R includes ITS replacement, resurfacing, concrete rehab, drainage work, and bridge repair

Revenues reimburse STTF for the express lane portion of total project costs

Amount due to STTF will be the annual construction expenditures which will accumulate as debt until repayment is complete.

Bond Debt Service Payments will be a percentage of the annual debt service payments related to the percentage of the project that is attributable to the express lanes. The bonds will be repaid over a period time

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## **APPENDIX 9 (C)**

### **Guidance for Express Lanes Cost Breakout**





# GUIDANCE FOR EXPRESS LANES COST BREAKOUT

July 27, 2017

## 1 Goal

Uniform and consistent approach for determining the cost breakout of the express lanes for a project. The express lanes cost breakout is for two (2) purposes and includes different line items depending on the purpose.

### 1.1 Purpose 1: Debt Repayment

The debt repayment amount is the cost associated with the express lanes construction and does not include cost of financing, operation and maintenance, and renewal work. The debt repayment analysis includes construction engineering inspection (CEI), mobilization, maintenance of traffic (MOT), project unknowns (contingency), owner's representative (if included in the financing) and the design portion if it is a Design Build contract. The elements will be determined as a percentage of the cost of construction based on the percentages shown in **Table 1** below. A prerequisite to including any costs in determining the debt repayment is whether or not the element, like post design services, will be financed or paid through other sources of funding. If financed the item is included in the debt repayment. If paid through other funding sources, the item is NOT included in the debt repayment.

**Table 1: Line Item Percentages for Calculating Total Construction Cost Used in Determining Debt Repayment**

Line Item	Percent
Preliminary Engineering-Owner's Rep Cost (if financed)	XX% TBD
Design (if design build contract)	15%
CEI	9%
Mobilization	10%
MOT	10%
Contingency (construction)	10%
Post Design Services	2%

### 1.2 Purpose 2: Project Finance Office's Evaluation of Express Lanes Financial Feasibility

The financial feasibility includes express lanes construction cost (as described above) plus the cost of financing, operation and maintenance, and renewal work.

## 2 Express Lanes Cost Breakout

To aid in the development of project specific express lanes cost breakout, a list of cost considerations for Department owned express lanes projects has been developed.

**Note to Developer of Express Lanes Cost Breakout Documentation:** This serves as documentation for determining the debt repayment and Project Finance Office's financial feasibility amounts. It is meant to provide uniformity, but not to prohibit project specific adjustment. When submitting an Express Lanes Cost Breakout for review, any deviations from this guidance are identified and marked up using track changes, deletions stricken through ~~(delete)~~ and inserted language underlined in color (underline). An electronic copy of the Express Lanes Cost Breakout, with changes clearly identified, is submitted to the Central Office Traffic Engineering and Operations State Managed Lane Engineer for review and approval prior to submittal to the Central Office Project Finance Office. All express lanes cost breakouts are reviewed and approved by the Comptroller's Office.

When the Project Finance Office evaluates an express lanes project for financial feasibility and debt repayment, only revenues and **costs specific to the express lanes are included**. In order to help the district segregate costs associated with the express lanes from costs for general use lanes, please follow these instructions.

Submit roll plots with two colors of shading. One color of shading identifying the elements considered in the express lanes costs, a second color of shading identifying the elements considered in the general use lane costs, and if necessary a third color of shading identifying elements that are both express lanes and general use lanes and will be prorated. Submit the Long Range Estimates (LRE) documentation used to determine the total construction cost of the project along with a spreadsheet that summarizes the cost from the LRE as express lanes versus general use lanes. The spreadsheet includes the lane miles for the project (including collector distributor roads and all ramps) and the lane miles for the express lanes (including ramps and the area of the bridge structures for the express lanes). Lane miles for each also include the length of transitions and tapers. The roll plots, the LRE, and the spreadsheet contain sufficient detail to facilitate the review by Central Office.

## **2.1 Evaluation Parameters**

1. For debt repayment, the LRE will be used to develop a total construction cost of the project. A spreadsheet will be used to document the cost of the express lanes. A percentage for the express lanes initial construction cost will be developed by:  
$$\frac{\text{express lanes cost}}{\text{Total Construction Cost from the LRE}}$$
2. This express lanes percentage is established in advance of the actual construction. Once established, the percentage will not change as the project is developed through final acceptance.
3. For the financial feasibility analysis, unless specified otherwise, all renewal, operations, and maintenance costs for the express lanes are accounted for by prorating based on the number of express lanes versus total number of lanes, including collector distributors and all ramps.
4. Right of way costs are excluded from the evaluation of debt repayment and financial feasibility.
5. All cost estimates are in present day dollars and the year in which the estimate is based is clearly shown on the documents.

## **2.2 Considerations for Express Lanes Construction Cost Estimation**

### **2.2.1 Roadway LRE Elements**

- a. Asphalt or concrete pavement within the express lanes limits,
- b. Asphalt or concrete pavement within the express lanes shoulders and buffer area
- c. Asphalt or concrete pavement for direct connect ramps to/from the express lanes system and slip ramps to/from the express lanes system
- d. Milling within the express lanes limits (when applicable)
- e. Milling within the express lanes shoulders and buffer area (when applicable)
- f. Milling within the direct connect ramps to/from the express lanes system and slip ramps to/from the express lanes system
- g. Base material within the express lanes limits,
- h. Base material within the express lanes shoulders and buffer area (when applicable)
- i. Base material within the direct connect ramps to/from the express lanes system and slip ramps to/from the express lanes system
- j. Embankment material within the express lanes limits, express lanes shoulders, buffer area, and direct connect ramps to/from the express lanes system and slip ramps to/from the express lanes system (including stabilization) - use an average fill of five (5') per feet.
- k. Cost of barrier wall (when applicable) used to separate the general use lanes from the express lanes. Do not include the median barrier wall dividing opposing traffic.

### **2.2.2 Drainage LRE Elements**

- a. Drainage (prorated by the area of express lanes pavement, buffer area pavement and express lanes shoulder pavement to the total pavement area for the project)

### **2.2.3 Signing and Marking LRE Elements**

- a. Signing and pavement markings cost (total signing and marking cost prorated by the number of express to total number of lanes)
- b. Express Lanes entrance sign sequence per Traffic Engineering Manual (TEM) Chapter 2.42
- c. Express lanes markers (when applicable)

### **2.2.4 Lighting LRE Elements**

- a. Lighting cost (total lighting cost prorated by the number of express to total number of lanes)

### **2.2.5 ITS LRE Elements**

- a. Safety devices required by the express lanes (i.e. gates and movable barrier systems)
- b. ITS device costs- prorated by the number of express and general use lanes with the exception of the following which will be 100% of the cost:

- a. Lane Status dynamic message sign (DMS)
- b. Toll Amount DMS
- c. Additional microwave vehicle detectors (MVD)s for the express lanes
- d. Closed Circuit Television (CCTV) camera's specific to monitoring the toll rate DMS for the express lanes
- c. Toll infrastructure costs (include site infrastructure cost from LRE, toll equipment cost provided by Turnpike, and communications infrastructure cost for tolls)
- d. Communications infrastructure cost for ITS (prorated by the number of express lanes to total number of lanes)

### 2.2.6 Structures LRE Elements

- a. Walls- noise walls and embankment/MSE retaining walls (prorated by the number of express to total number of lanes).
- b. Bridge structures associated with the express lanes- include ramps to and from the express lanes that are on structure and **additional** width of bridge needed to accommodate the express lanes portion of the footprint. For new bridges, do not include barrier wall if one would already be required by general use lanes. For bridge widening, include removal & replacement of barrier wall (LRE bridge widening includes cost of new barrier wall).

## 2.3 Operation and Maintenance (O&M) and Renewal Work

For non-ITS O&M, costs are estimated using \$7,000 per lane mile per year.

The ITS O&M costs are estimated using \$30,000 per lane per mile per direction/per year.

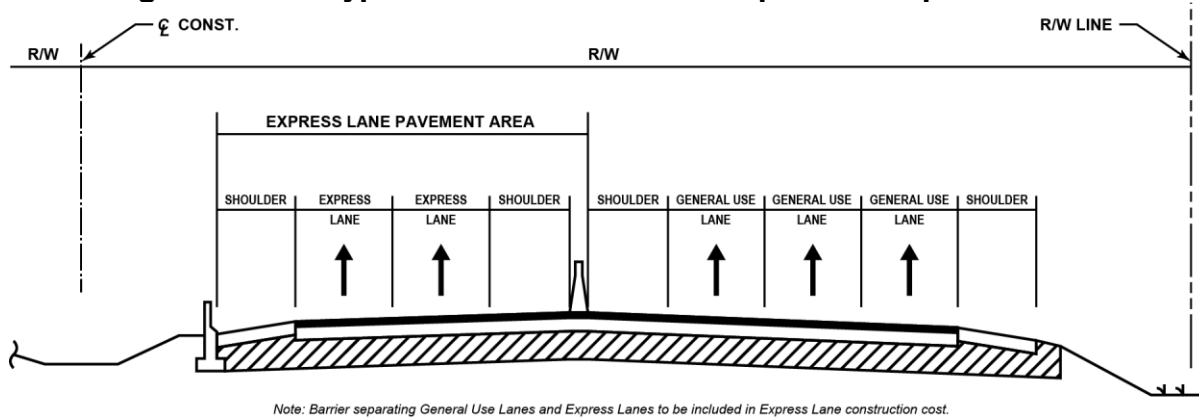
- a. Add a specific line item for FHP dedicated to express lanes

For Renewal work, the service life and lane mile costs use the guidance in **Table 2**.

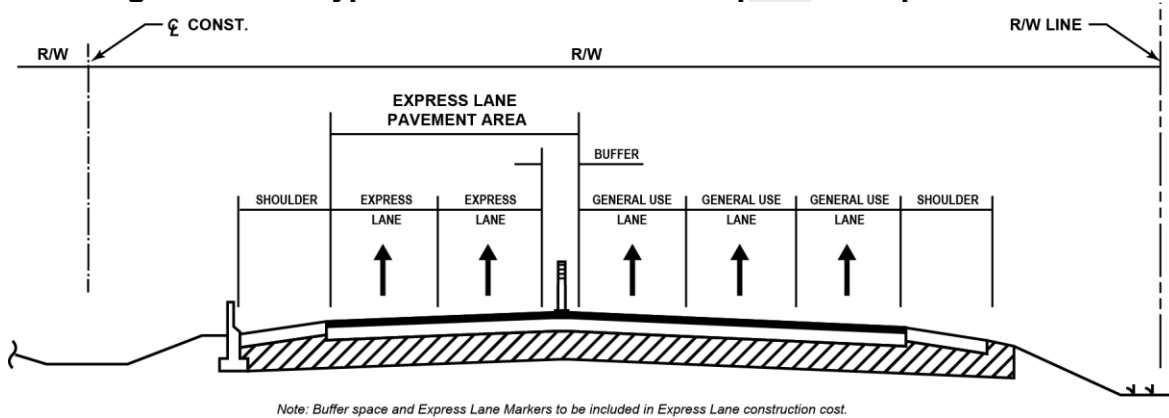
**Table 2: Renewal Line Item Service Life and Costs**

Renewal Line Item	Service Life	Cost	Comments
Asphalt resurfacing	15 years	\$200K/lane mile	Includes upgrading signing, lighting pavement marking
Concrete Pavement Rehabilitation	20 years	\$500K/lane mile	Includes upgrading signing, lighting pavement marking
Drainage			Do not consider
Express Lanes Marker Replacement	1 year	\$26,400/lane mile	Estimate half of the express lanes markers are replaced annually and includes installation cost
ITS	5-7 years	\$150K/lane	
Bridges	10 years	\$20/SQF	Joint repair and painting

**Figure 1: Half Typical Section of Barrier Separated Express Lanes**



**Figure 2: Half Typical Section of Buffer Separated Express Lanes**



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# FLORIDA EXPRESS LANES



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